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United States Department of the Interior
Timbisha Shoshone Tribe

Final Legislative Environmental Impact Statement

Timbisha Shoshone Homeland

VOLUME I

Lead Agency

Cooperating Agencies

November 2000

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UNITED STATES DEPARTMENT OF THE INTERIOR
TIMBISHA SHOSHONE TRIBE

Final Legislative Environmental Impact Statement Timbisha Shoshone Homeland

VOLUME I OF III:
EXECUTIVE SUMMARY
CHAPTERS I-IX

NOVEMBER 2000

Prepared for:

Lead Agency

National Park Service
United States Department of the Interior

Cooperating Agencies

Bureau of land Management
United States Department of the Interior

United States Fish and Wildlife Service
United States Department of the Interior

Bureau of Reclamation
United States Department of the Interior

Bureau of Indian Affairs
United States Department of the Interior

Nye County, Nevada

Final Legislative Environmental Impact Statement
The Timbisha Shoshone Homeland Act

Lead Agency: National Park Service (NPS)

Cooperating Agencies: Bureau of Land Management (BLM); Bureau of Reclamation (BOR); U.S. Fish and Wildlife Service (USFWS); and Nye County, Nevada

Abstract: This document is referred to as a final Legislative Environmental Impact Statement (LEIS) and has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969. (42 U.S.C.A. 4332(2)(C); See also 40 C.F.R 1508.9). The final LEIS is part of the associated legislation (S. 2102), *Timbisha Shoshone Homeland Act*, which passed the Senate and House of Representatives and became enacted on October 17, 2000.

The final LEIS provides two alternatives to be evaluated according to potential environmental impacts that could result from the transfer of several separate parcels of land identified by the National Park Service (NPS) and the Bureau of Land Management (BLM) to be held by the Secretary of the Interior in trust for the Timbisha Shoshone Tribe. The resources analyzed include: cultural resources, water resources, socio-economics and environmental justice, land use, recreation and wilderness, vegetation, and wildlife. The LEIS also evaluates the possible authorization to purchase two parcels of approximately 120 acres of former Indian allotted lands in Saline Valley, California, at the edge of Death Valley National Park, and the 2,430-acre Lida Ranch near Lida, Nevada, from private owners.

Alternative A, Negotiated Agreement and Proposed Legislation, is the proposed action and, through congressional legislation, would allow for the transfer of several separate parcels to be held in trust by the Secretary of the Interior for the Timbisha Shoshone Tribe for the creation of a homeland. **Alternative B**, No-Action, would have the separate parcels identified for transfer continue under existing regulations and authorities, contrary to the intent of the California Desert Protection Act (CDPA).

Type of Statement: Final Legislative Environmental Impact Statement in support of the *Timbisha Shoshone Homeland Act.*

For Further Information: Questions about the project can be addressed to Joan DeGraff, National Park Service, (760) 255-8830.

FOREWORD

The *Timbisha Shoshone Homeland Final Legislative Environmental Impact Statement* (LEIS) is composed of the following volumes:

VOLUME I

This volume presents the draft LEIS with revisions that incorporate changes to text as a result of responding to public comments or new information. Additions to the text of Volume I are provided in underline text. Deletions are indicated by ~~strike-out text~~. This volume includes the following chapters:

Executive Summary
Chapter 1.0 — Introduction
Chapter 2.0 — Description of Proposed Action, No Action, and Alternatives Considered But not Brought Forward for Analysis
Chapter 3.0 — Description of Environment and Affected Resources
Chapter 4.0 — Description of Potential Environmental Consequences
Chapter 5.0 — Consultation and Coordination
Chapter 6.0 — Acronyms and Glossary of Terms
Chapter 7.0 — Distribution List for the Final LEIS
Chapter 8.0 — References
Chapter 9.0 — Index

VOLUME II

This volume presents a summary of comments raised by the public, reproductions of the public comment correspondence, and responses to those comments.

VOLUME III

This volume presents 26 appendices that provide additional data and technical information referenced in Volume I of the final LEIS.

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EXECUTIVE SUMMARY

S.1 Introduction

For decades the Timbisha Shoshone Tribe has sought to obtain trust land within its aboriginal homeland. In 1994, Congress enacted the California Desert Protection Act (C.D.P.A., [Public Law 103–433]), including Section 705(b), which began to address the need for a recognized land base for the Tribe. Section 705(b) directs the U.S. Secretary of the Interior to conduct a study to identify lands suitable for a homeland for the Timbisha Shoshone Tribe. The Secretary of the Interior's draft report, *The Timbisha Shoshone Tribal Homeland: A Draft Secretarial Report to Congress to Establish a Permanent Tribal Land Base and Related Cooperative Activities*, proposed several recommendations that could not be accomplished by the Department of the Interior without congressional authorization and proposed legislation.

The United States is considering the transfer of federal lands and acquisition of private lands to be held in trust for the Timbisha Shoshone Tribe by the Secretary of the Interior. The transfers and acquisitions would be for the purpose of creating a tribal homeland in and around Death Valley National Park pursuant to the study authorized by Section 705(b) of the California Desert Protection Act of 1994. The Tribe has been federally recognized since 1983, but has no land base. The action considered in this legislative Environmental Impact Statement is a set of recommendations for congressional legislation to authorize establishment of a permanent land base for the Timbisha Shoshone Tribe, and to identify locations on federal lands within the Tribe's ancestral homeland for purposes of tribal use pursuant to cooperative agreements.

The National Environmental Policy Act (NEPA) of 1969 and regulations of the Council on Environmental Quality (40 C.F.R 1508.9) provide that any "proposal for legislation" must be accompanied by an Environmental Impact Statement (EIS). (42 U.S.C.A. 4332(2)(C).) Accordingly, the National Park Service, in consultation with the Bureau of Land Management, Bureau of Indian Affairs, and Bureau of Reclamation, is authorized to, and has prepared, this Legislative Environmental Impact Statement (LEIS) to analyze the Proposed Action and the No-Action Alternative and their impacts on the environment pursuant to the California Desert Protection Act (C.D.P.A., [Public Law 103–433]) Title VII, Section 705(b) and in accordance with NEPA. (*Id.*). The National Park Service (NPS) is acting as the federal lead agency for this LEIS. In October 1999, the Department of the Interior (DOI) determined that NPS would serve as the lead agency and that the Bureau of Land Management (BLM) would be a cooperating agency to implement the requirements of NEPA. As jurisdictional agencies of federal lands currently under consideration for this project, NPS and BLM are responsible for determining any environmental impacts that may be associated with possible land transfer activities. The agencies are also responsible for determining appropriate mitigation measures. Other cooperating agencies acting in the preparation of this document include the U.S. Fish and Wildlife Service (USFWS), Bureau of Reclamation (BOR), Bureau of Indian Affairs (BIA), and Nye County, Nevada.

This document is intended to fulfill the format and content requirements as well as the spirit of NEPA. The LEIS analyzes the Proposed Action and the No-Action Alternatives (described in Chapter 2.0) and their potential effects on the human environment pursuant to the California Desert Protection Act (C.D.P.A., [Public Law 103–433]) Title VII, Section 705(b), and in accordance with NEPA. (42 U.S.C.A. 4332(2)(C).) The analysis is limited to the Proposed Action of land transfers in trust and does not address in detail future uses or activities subject to future cooperative agreements. Cooperative activities identified in the *Secretarial Report* and the Proposed Action would be subject to all applicable acts, codes, rules, and regulations at the time the cooperative agreements are completed.

S.2 Proposed Action

The Proposed Action is to establish a permanent tribal land base and related cooperative activities within the Timbisha Shoshone Tribe's ancestral homeland. Overall, the Proposed Action requests authorization to transfer approximately 7,500 acres and to purchase several privately held parcels of federal land to be held in trust for the Tribe by the U.S. Secretary of the Interior. In addition, the Proposed Action directs NPS, BLM, USFWS, and the Tribe to negotiate and enter into cooperative agreements, using existing authorities, for tribal access to and use of certain lands of particular cultural and historical significance to the Tribe. The authority to manage these lands shall be retained by the respective agencies. In recognition of the contributions of the Tribe to the history, culture, and ecology of the region, the Proposed Action calls for the designation of a Timbisha Shoshone Natural and Cultural Preservation Area within and adjacent to Death Valley National Park. The following will summarize the Proposed Action according to NPS, BLM, and USFWS activity.

S.2.1 National Park Service

The proposed legislation calls for the transfer of 314 acres of NPS land at Furnace Creek to the Secretary of the Interior to be held in trust for the Tribe. Located in central Death Valley National Park, the parcel includes a 25-acre nondevelopment zone and an adobe restoration area containing several historical adobe homes, which shall be managed by the Tribe as a tribal historic district. The transfer parcel is located directly south of the Furnace Creek Ranch development, east of the tribal village site and offices, and west of the junction of California State Routes 178 and 190. The action proposes that all future development at Furnace Creek be subject to standards of size, design, and impact that shall be jointly agreed upon by NPS and the Tribe.

Historically, Indian Rancheria was comprised of two parcels totaling 160 acres. One 80-acre parcel is held in private fee; the other parcel is held by heirs of the Indian allotment in trust by the BIA for the heirs of the original allottee. The proposed legislation calls for authorization to purchase from willing sellers two ~~privately held~~ parcels and appurtenant water rights or water rights held separately, an area of approximately 120 acres, identified as Indian Rancheria to be held in trust for the Tribe by the Secretary of the Interior; 80 acres would be purchased from the public allotment and 40 acres would be purchased from the land held privately~~.~~ Indian Rancheria is located in central Saline Valley, twenty miles northwest of Ubehebe Peak, south of Saline Valley Dunes, and north of Salt Lake, and is on the Death Valley National Park boundary. It is a designated Wilderness Area.

Lands subject to Tribal cooperative activity/special use under NPS jurisdiction shall be categorized as follows: (1) Furnace Creek Tribal Cooperative Activity Areas, (2) Timbisha Shoshone Natural and Cultural Preservation Area, and (3) Other Special Use Areas.

S.2.2 Bureau of Land Management

The legislation proposes transfer of approximately 7,240 acres of land currently managed by BLM to the Secretary of the Interior to be held in trust for the Tribe. The lands ~~to be~~ identified for-transfer~~red~~ are located at: (1) Death Valley Junction, California; (2) Centennial, California; (3) Scotty's Junction, Nevada; and (4) Lida Community Parcel, Nevada.

The proposed legislation also calls for authorization to purchase Lida Ranch, which is located north of Death Valley National Park, in Esmeralda County, Nevada. Situated on the eastern slope of the Palmetto Mountains off Nevada State Route 266, the 2,340-acre ranch was originally developed by a Timbisha family who gardened and grew hay for their horses and cattle on the site. The Proposed Action includes

authorization to purchase from a willing seller the land and appurtenant water rights or water rights held separately, in conjunction with the parcel located at Lida Ranch.

Cooperative activities are proposed at Lida Tribal Use Area, Nevada; Eagle Mountain, California; and Warm Sulphur Springs, California.

S.2.3 U.S. Fish and Wildlife Service

Cooperative activities are proposed at Ash Meadows National Wildlife Refuge, which is located outside the southeast boundary of Death Valley National Park in the Amargosa Desert, slightly north of the California-Nevada border and eight miles northeast of the junction of California State Routes 127 and 190. It is anticipated that the Tribe and USFWS may enter into a cooperative agreement to ensure Tribal access to and compatible use of the area and to allow the Tribe to participate in the protection of cultural resources in the area.

S.3 Description of Environment and Potentially Affected Resources

S.3.1 Introduction

Discussion of existing resources and environmental conditions are provided in Chapter 3.0:

3.2 — Cultural Resources

3.3 — Water Resources

3.4 — Socioeconomics and Environmental Justice

3.5 — Land Use, Recreation, and Wilderness

3.6 — Vegetation

3.7 — Wildlife

Those resources and environmental concerns that would not be appreciably affected by alternative actions were eliminated from further consideration and comparative analysis. Additional topics considered but dismissed from further analysis include: geology, noise, transportation, visual resources, and air quality.

As appropriate, these sections provide discussion of regional and local conditions to allow a comprehensive evaluation of the potential impacts related to the proposed land transfers in trust. Because the proposed cooperative activities/special uses do not involve permanent development, detailed evaluations of resources were not conducted as part of this LEIS. Further, cooperative agreements considered by the Tribe, NPS, BLM, and USFWS would be subject to all applicable federal laws, executive orders, departmental guidelines, and bureau policies and practices. Future development or program actions undertaken as a cooperative activity/special use would be subject to an appropriate level of environmental review.

S.3.2 Cultural Resources

The past, present, and future of the Timbisha Shoshone Tribe is centered in the Furnace Creek area, their ancestral homeland. The Timbisha take their name from the locally occurring red ochre, which was used for burial ceremonies and healing purposes (Theodoratus et al. 1998, 46). In the early 20th century and

perhaps earlier, Native Americans of Kawaiisu and Southern Paiute origin also inhabited Furnace Creek (Steward 1938, 91–92). With a fresh water source at their village site, these people used the Panamint Mountains to the west as their primary resource area. Although this village has changed location at least three times, Furnace Creek remains the center of Timbisha Shoshone life. The tourism associated with Death Valley National Park has attracted Native Americans of different tribal groups for work opportunities.

S.3.3 Water Resources

When Congress established Death Valley National Monument in 1933 and enlarged the area to create Death Valley National Park with the passage of the California Desert Protection Act in 1994, it reserved water to meet Park purposes. With respect to water rights for Wilderness Areas under Section 706 of the 1994 act, Congress expressly reserved "…with respect to each wilderness area designated by this Act…a quantity of water sufficient to fulfill the purposes of this Act. The priority date of such reserved rights water shall be the date of enactment of this Act." With the exception of reserved rights to Devil's Hole, the precise nature and extent of federal reserved rights in the areas selected for establishment of the Timbisha Shoshone homeland will likely remain uncertain until the United States is joined in an adjudication, the Department of Justice files claims to water rights on behalf of the United States, and the court decrees the United States rights. There is well established case law that states the priority date of an implied federal reserved water right is the date the reservation is created and that Congress can only reserve appurtenant and unappropriated water. (*Cappaert v. U.S.).*

The United States agreed that Fred Harvey, Inc., has appropriative water rights totaling ~~2,064~~ 2.064 cubic feet per second in the Furnace Creek area of the Park that are "…prior and superior to any rights of the United States in and to the waters from such sources," and a riparian right of 0.15 cubic feet per second that "…shall not be diminished by any exercise by the United States of any claimed riparian or other right." These are collectively referred to in the agreement as Fred Harvey Inc.'s "entitlement." AmFac, Inc. is the successor to Fred Harvey, Inc. (Werrell, (Ed.) 1988.)

A small number of water rights are held by landowners in the vicinity of Scotty's Junction.

S.3.4 Socioeconomics And Environmental Justice

Southern Nevada, including portions of Nye County, has been and continues to be one of the fastest growing areas in the nation, and Nevada is the fastest growing state. In 1998, the U.S. Bureau of the Census identified Nye County as one of the fastest-growing counties in the United States in the category of towns with 10,000 or more persons, having experienced an increase in population of 6.1 percent from 1997 through 1998. According to Nye County sources, their population is projected to reach 51,160 by 2008, thereby experiencing a growth rate of 51.6 percent since 1998 (Planning Information Corporation 1998).

Of the three counties in the proposal area, Nye County has the highest median household income, while Inyo County, California, has the highest per capita income. Poverty levels have decreased in Esmeralda County, Nevada, since 1989, but increased slightly in Nye County and Inyo County.

Overall, the three counties are proportionate in terms of their racial, low income, and age compositions. Because the specific proposed actions are not yet definite, any attempt to estimate the potential for disproportionately high and adverse human health or environmental effects on specific population segments would be speculative at this time. Given the close similarity of the population composition and other socioeconomic characteristics between the three counties, it is unlikely that any population or

community would experience any proposal-related social or economic effects in a disproportionate manner.

S.3.5 Land Use, Recreation, and Wilderness

~~The majority of lands subject to the Proposed Action are designated as multiple use, some are designated as wilderness, and three parcels are proposed for private acquisition. Recreation is common in all these areas.~~

The lands identified for transfer are designated as multiple use. Approximately 95 percent of the lands proposed to be recognized (not transferred) as a Timbisha Shoshone Natural and Cultural Preservation Area on future Death Valley National Park maps are designated as Wilderness. In addition, the Proposed Action calls for the purchase of three parcels; two parcels are held in private fee and the other parcel is held as a public allotment by the BIA.

The Furnace Creek community encompasses an area of four square miles and includes a cluster of buildings and facilities near the mouth of Furnace Creek Wash. Furnace Creek is the operational center of Death Valley National Park. At Furnace Creek, the Timbisha Shoshone Tribe maintains a tribal center and several residences. Adjacent to Furnace Creek Ranch, NPS operates its Park headquarters. In addition, a decades-old date farm still produces a cash crop of Deglet Noor dates from approximately 2,200 palms.

Furnace Creek also offers the Park's largest collection of services: including accommodations (from tent sites to luxurious suites), restaurants (fast-food to fine dining), stores (groceries, gifts, essentials), sports (swimming, horseback riding, golf), an airport, a full-service gas station, and two museums. The Furnace Creek Inn and Ranch are privately owned inholdings surrounded by the Park.

S.3.6 Vegetation

Lands subject to the Proposed Action occur in two physiographic regions differentiated by elevation, latitude, and dominant vegetation. These two regions include the Mojave Desert and the Great Basin geomorphic provinces (Barbour 1988). The Mojave Desert is located in the rain shadow of the southern Sierra Nevada and Transverse Ranges of California. The Mojave Desert is bordered by the Great Basin Desert to the north and east and to the south by the Sonoran Desert. The region consists of relatively flat basins separated by mountain ranges. Elevations in the basins range from 1,000 to 3,300 feet above mean sea level above mean sea level. With notable exceptions, elevations in the mountain ranges rarely exceed 7,000 feet above mean sea level. Many of the basins contained extensive freshwater lakes during the Pleistocene period. The remaining dry lakebeds are often rich in mineral salts.

Vegetation in the region is dominated by low-growing shrub species with morphological and physiological adaptations to survive prolonged periods of drought and high temperatures. In the Mojave, a significant portion of the flora is contributed by ephemeral (annual) species that evade drought conditions by passing the summer and fall seasons in the form of seed until suitable conditions for germination, growth, and reproduction arise.

S.3.7 Wildlife

Death Valley National Park and the adjacent desert support a variety of wildlife species, including 51 species of native mammals, 2 species of introduced large mammals, 307 species of birds, 36 species of reptiles, 3 species of amphibians, and 5 species and 1 subspecies of native fishes (Hansen 1972 and 1973; Landye 1973). Small mammals are more numerous than large mammals, such as desert bighorn sheep,

coyote, bobcat, mountain lion, and mule deer. Mule deer are present in the pinyon-juniper associations of the Grapevine, Cottonwood, and Panamint Mountains.

Characteristic vertebrate species in the region surrounding the proposed Timbisha Shoshone homeland and cooperative activity areas include coyote (*Canis latrans*), raven (*Corvus corax*), desert cottontail (*Silvilagus audubonii*), and black-tailed jackrabbit (*Lepus californicus*). Wild mustang (*Equus caballus*) and burros (*Equus assinus*) were observed on several sites. A pair of coyotes was observed at the Furnace Creek site as well as tracks and scat from ringtail (*Bassariscus astutus*), kit fox (*Vulpes velox),* and kangaroo rat (*Dipodomys* spp.).

Portions of the private parcels proposed for acquisition and transfer at Lida Ranch, and the Lida Community Parcel and Centennial transfer sites provide suitable habitat for the desert bighorn sheep (*Ovis canadensis nelsoni*). Death Valley Junction, Scotty's Junction, and Indian Rancheria are situated on historical migration routes used by the bighorn to travel between their winter and summer ranges. These parcels are considered to be important lambing areas as well.

Portions of the Centennial site are reported by the BLM sensitive-species list to provide habitat for the Panamint alligator lizard (*Gerrhonotus panamintinus*), Mohave ground squirrel (*Spermophilus mohavensis*), and burrowing owl (*Speotyto cunicularia*). Mohave ground squirrel was observed during a reconnaissance survey at the Centennial parcel (Appendix X.) The Mojave desert tortoise (*Gopherus agassizii*), a federally listed threatened species and a California Department of Fish and Game threatened species, is known from localities within and surrounding Death Valley National Park. No evidence of burrows or its presence was observed at any of the lands proposed for transfer, acquisition and transfer, or cooperative activity/special use. (Appendices Y and Z.)

S.4 Description Of Potential Environmental Consequences

S.4.1 Introduction

Chapter 4.0 discusses the potential environmental consequences (impacts) to the existing affected environment that could occur from implementation of alternatives described in this LEIS. Alternatives considered include the Preferred Alternative and No Action.

The legislative proposal incorporates the major elements associated with establishing lands in trust for the Tribe, acquisition of private parcels, and areas subject to cooperative activities/special uses. Specific development proposals for trust parcels have not been prepared. Consequently, the design, area of disturbance, projected water requirements, and other environmental factors cannot be evaluated with certainty. Further, because these lands would be held in trust for the Tribe in perpetuity, specific land use types and intensities may be subject to change over time. The impact analysis will be limited to the proposed action of land transfers in trust and not potential future development uses on transferred lands, nor actions subject to future cooperative agreements. Cooperative activities and special uses identified in the *Secretarial Report* and the Proposed Action would be subject to all applicable acts, codes, rules, and regulations at the time the cooperative agreement is completed.

S.4.2 Cultural Resources

Implementation of the Preferred Alternative would provide the Timbisha Shoshone Tribe, NPS, and BLM with greater opportunities for government-to-government collaboration and cooperation. There would be significant advantages and improvements to areas located inside and outside Death Valley National Park with the institution of this alternative. Improved communication and collaboration between the parties

would likely result in greater opportunities to address resource needs in a cooperative manner. Tribal participation would also expand the interpretive perspectives developed for visitors.

S.4.3 Water Resources

With implementation of the Preferred Alternative, it is anticipated that new land development, including residential and commercial uses, would be introduced on lands that possess surface drainage features. For most of the land transfer parcels, development ~~can~~ could be conducted without substantial alteration to desert washes, springs, or other water bodies. Specific development proposals would be required to assess the full extent of effects to surface drainage features. Cooperative activities/special uses would include efforts to restore and enhance the function of springs within the Tribe's ancestral homeland through a cooperative agreement with BLM and NPS, and these are considered beneficial effects. Anticipated environmental consequences at parcels subject to development and cooperative activities/special uses are discussed below.

Information obtained from water exploration studies at the Centennial parcel indicate that a water source adequate to support use of this parcel does not exist. (Appendix W.)

Future, as yet to be identified development (~~mining,~~ residential, and commercial) could alter surface water resources in Death Valley in the future and new projects could introduce fill into waters of the United States. Alteration of surface waters to accommodate development may occur on lands to be transferred in trust to the Tribe. For cooperative activities/special uses, beneficial effects would be expected. Introduced exotic plants, fire suppression, and other human activities have altered the character of many of the springs in the Mojave Desert. Tribal participation in cooperative activities/special uses related to restoration and management of streams and spring would serve to enhance the character and flow characteristics of these water bodies, helping to repair and improve hydrologic and biological conditions.

S.4.4 Socioeconomics Resources And Environmental Justice

Implementation of the Preferred Alternative would generate many socioeconomic effects. On a general basis, development at lands to be transferred could generate the need for additional services such as policing, fire suppression, and emergency medical services. ~~The Preferred Alternative would remove approximately 7,240 acres of lands from existing BLM ownership, resulting in a small decline in revenues paid by BLM to counties in California and Nevada.~~

A major reason for the proposed legislation is to obtain social and economic benefits for the Tribe as described in the *Secretarial Report*. Activities resulting in increased income for tribal members would also benefit communities, counties, and businesses in the region through consumptive purchases. ~~There would be a minor negative economic effect from the loss of annual revenues from lands transferred from BLM.~~ The only revenue loss to the counties would be seen from the transfer of private lands and not federal lands as there is no Payment in Lieu of Taxes (PILT) loss. Development at lands to be transferred could generate the need for additional services such as police (Nevada only), fire suppression and emergency medical services. Provision of these services would be the responsibility of the Tribe either by providing those services directly or by contracting with local agencies to provide the services. Allocation of limited water resources to the Tribe may limit development in other areas, by making water unavailable for allocation.

S.4.5 Land Use, Recreation, and Wilderness

Implementation of the Preferred Alternative would improve residential land uses at Death Valley National Park by allowing development of modern housing with up-to-date infrastructure and construction. Commercial uses within the Park would be consistent with tribal and Park values, needs, and purposes. Tribal presence in the Park would add to the historical context of visitors' experiences of Death Valley and the surrounding region of the Mojave Desert.

Specific development plans would be required to evaluate the consistency of proposed land uses with applicable plans and policies. The anticipated types and levels of development may be subject to limitation by the availability of critical resources such as water.

S.4.6 Vegetation

The Preferred Alternative assumes that some loss of plant communities would occur as a consequence of conversion to a developed condition. Lands identified for transfer were reviewed for biological constraints, including special-status plant species and sensitive plant community types. Areas known to support sensitive resources have been largely avoided, but the potential exists for special-status plant species to occur at several locations, subject to verification by focused surveys during the appropriate seasons. Loss of habitat for special-status species is considered a direct, adverse effect of the Preferred Alternative. Drawdown of groundwater upgradient of lands supporting desert riparian plant communities would be considered an indirect effect, but is not quantifiable without specific development plans (including water use) and adequate information on aquifer flow systems to predict downgradient effects.

Implementation of the Preferred Alternative would include activities with both adverse and beneficial effects. Loss of habitat for special-status plant species if it were to occur would be considered adverse. Potential benefits to plant communities and habitat for special-status species would be expected to occur with development of cooperative agreements for identified areas.

S.4.7 Wildlife

The Preferred Alternative assumes that some loss of habitat for wildlife associated with Mojave Desert plant communities would occur as a consequence of development. Lands identified for transfer were reviewed for biological constraints, including records of special-status animal species and habitats for these animals. These areas have been largely avoided, but the potential exists for special-status wildlife to occur at several locations, subject to verification by focused surveys during the appropriate season. ~~Three~~ Two of the parcels proposed for transfer are located in part within Wild Horse Herd Management Areas (HMA) (Death Valley Junction, ~~Scotty's Junction,~~ and Centennial). The Scotty's Junction parcel is located entirely within the Palmetto HMA. Loss of habitat for special-status wildlife would be considered a direct, adverse effect of the Preferred Alternative. Drawdown of groundwater upgradient of lands supporting desert riparian plant communities and reducing the availability of surface water for wildlife use would be considered an indirect effect, but is not quantifiable without specific development plans (including water use) and adequate information on aquifer flow systems to predict downgradient effects.

Reconnaissance-level surveys were conducted for Mohave ground squirrel at the Centennial parcel (Appendix X.) Also, detailed surveys were conducted for Mojave desert tortoise at the Death Valley Junction and Scotty's Junction parcels (Appendices Y and Z.) Mohave ground squirrel was observed while no evidence was found to indicate the presence of Mojave desert tortoise (*Id.*)

The reduction of wildlife habitat associated with future development on lands to be transferred is considered small in proportion to the abundance of those habitats in the region. The potential exists to adversely affect one or more special-status species.

Table S.1.
Summary of Proposed Action and Alternatives
Timbisha Shoshone Homeland
Final LEIS

	PROPOSED ACTION (ALTERNATIVE 1)	NO ACTION (ALTERNATIVE 2)
GENERAL DESCRIPTION OF ALTERNATIVES	• The Proposed Action is to establish a permanent tribal land base and related cooperative activities within the Timbisha Shoshone Tribe's ancestral homeland. Overall, the Proposed Action requests authorization to transfer approximately 7,500 acres and to purchase several privately held parcels of federal land to be taken into trust for the Tribe by the U.S. Secretary of the Interior. • The Proposed Action directs NPS, BLM, USFWS, and the Tribe to negotiate and enter into cooperative agreements, using existing authorities, for tribal access to and use of certain lands of particular cultural and historical significance to the Tribe. The authority to manage these lands shall be retained by the respective agencies.	• Follow the existing management approach under the General Management Plan and other site-specific planning including the 1994 Natural and Cultural Resource Management Plan. These actions are typically referred to as the "status quo" or no action alternative, since this is what would occur if the Proposed Action was not undertaken.Under the No-Action Alternative, the legislation would not be passed by Congress and signed into law, land transfers and acquisitions would not be executed, and no lands within the Timbisha Shoshone ancestral homeland would be held in trust for the Tribe by the Secretary of the Interior. • This alternative would not respond to Section 705(b) of the California Desert Protection Act and would not fulfill the Secretary's trust responsibility. • This alternative would leave unadressed the proposal for establishment of a land base for the Tribe, the designation of any special use areas with NPS, BLM, and USFWS, and would leave the contributions of the Tribe to the history, culture, and ecology of the region unacknowledged. • Under the No-Action alternative, the Tribe would continue to be federally recognized, but would not receive any of the benefits associated with having a land base. • This alternative would lend to resources to be managed according to existing NPS and BLM regulations and policies.
Proposed Activities by the National Park Service (NPS)	• The proposed legislation calls for the transfer of approximately 314 acres of NPS land at Furnace Creek to the Secretary of the Interior to be held in trust for the Tribe. Legislative authorizing establishment of the Timbisha Shoshone Community Development and Adobe Restoration Area (an approximately 314-acre trust parcel including a 25-acre non-development zone at the north end of the parcel), for community, residential, historic restoration, and visitor-related	• Under the No Action Alternative, lands would not be transferred in trust to the Secretary of the Interior for the Tribe, the two parcels at Indian Rancheria would not be authorized for purchase, and cooperative activities/ special uses would not take place at the identified lands recommended in the Secretarial Report. Accordingly, the NPS would manage resources according to existing

Table S.1.
Summary of Proposed Action and Alternatives
Timbisha Shoshone Homeland
Final LEIS

	PROPOSED ACTION (ALTERNATIVE 1)	NO ACTION (ALTERNATIVE 2)
Proposed Activities by the (NPS) (cont.)	economic development, including requirements for jointly agreed upon standards for development that would require consistency with tribal and park values, needs, and purposes. The Tribe shall be granted a right-of-way for ingress and egress on Highway 190. • Historically, Indian Rancheria was comprised of two, 80 acre parcels. The proposed legislation also calls for authorization to purchase from willing sellers ~~two privately held p~~ parcels, an area of approximately 120 acres, and appurtenant water rights or water rights held separately, identified as Indian Rancheria to be taken into trust for the Tribe by the Secretary of the Interior. 40 acres are part of a privately held 80 acre parcel; the remaining 80 acres are held in trust by the BIA as a public domain allotment. • Lands subject to Tribal cooperative activity/special use under NPS jurisdiction shall be categorized as follows: (1) Furnace Creek Tribal Cooperative Activity Areas, (2) Timbisha Shoshone Natural and Cultural Preservation Area, and (3) Other Special Use Areas. Cooperative Activities/ special uses would be subject to a cooperative agreement between the Tribe and NPS. Legislation authorizing establishment of the Buffer and the Mesquite Management Areas of approximately 3,000 acres, including authorization for restricting visitor use in these areas. Legislative authorizing designation of the Timbisha Shoshone Natural and Cultural Preservation Area for low impact, ecologically sustainable, traditional practices, uses and activities by the Timbisha Shoshone Tribe pursuant to a jointly established management plan agreed upon by the Tribe, the National Park Service, and the Bureau of Land Management. • Legislation authorizing and directing the establishment and maintenance, in perpetuity, of a tribal resource management field office, garage and storage area at Wildrose, all within the area of the existing ranger station, and traditional use camps at Wildrose and Hunter Mountain in locations agreed to by the Tribe and the National Park Service. • Negotiate and enter into a joint management plan agreed upon by the Tribe, the National Park Service and the Bureau of Land	regulations and policies.

Table S.1.
Summary of Proposed Action and Alternatives
Timbisha Shoshone Homeland
Final LEIS

	PROPOSED ACTION (ALTERNATIVE 1)	NO ACTION (ALTERNATIVE 2)
	Management. The joint management plan will include provisions for tribal facilities at Wildrose and for traditional camps at Hunter Mountain, two areas of special significance to the Tribe.	
Proposed Activities by the Bureau of Land Management (BLM)	• The legislation proposes transfer of approximately 7,240 acres of land currently managed by BLM to the Secretary of the Interior to be held in trust for the Tribe. The lands to be transferred are located at: (1) 1000 acres at Death Valley Junction, California; (2) 640 acres at Centennial, California; (3) 2,800 acres at Scotty's Junction, Nevada; and (4) 2,800 acres at Lida Community Parcel, Nevada. • The proposed legislation also calls for authorization to purchase Lida Ranch, which is located north of Death Valley National Park, in Esmeralda County, Nevada. Situated on the eastern slope of the Palmetto Mountains off Nevada State Route 266, the 2,340-acre ranch was originally developed by a Timbisha family who gardened and grew hay for their horses and cattle on the site. The Proposed Action includes authorization to purchase from a willing seller the land and appurtenant water rights or water rights held separately, in conjunction with the parcel located at Lida Ranch. • Cooperative activities are proposed at Lida Tribal Use Area, Nevada; Eagle Mountain, California; and Warm Sulphur Springs, California.	• Under the No Action Alternative, lands would not be transferred in trust to the Secretary of the Interior for the Tribe, the parcel at Lida Ranch would not be authorized for purchase, and cooperative activities/ special uses would not take place at the identified lands recommended in the Secretarial Report. Accordingly, BLM would manage resources according to existing regulations and policies.
Proposed Activities by the U.S. Fish and Wildlife Service (USFWS)	• It is anticipated that the Tribe and USFWS may enter into a cooperative agreement to ensure Tribal access to and compatible use of the area and to allow the Tribe to participate in the protection of cultural resources in the area.	• The proposed cooperative agreement (as identified in the Secretarial Report) would not be entered into by the Tribe and USFWS. USFWS would continue to manage resources according to existing regulations and policies.

Table S.2.
Summary of Potential Impacts
Timbisha Shoshone Homeland
Final LEIS

	PROPOSED ACTION (ALTERNATIVE 1)	NO-ACTION (ALTERNATIVE 2)
POTENTIAL IMPACTS ON CULTURAL RESOURCES	• Implementation of the Preferred Alternative would provide the Timbisha Shoshone Tribe, National Park Service and Bureau of Land Management with greater opportunities for government-to-government collaboration and cooperation.	• Under the No-Action Alternative, the legislation would not be passed by Congress and signed into law, land transfers and acquisitions would not be executed, and no lands within the Timbisha Shoshone ancestral homeland would be held in trust for the Tribe by the Secretary of the Interior. • This alternative would not respond to Section 705(b) of the California Desert Protection Act and would not fulfill the Secretary's trust responsibility. • This alternative would leave unadressed the proposal for establishment of a land base for the Tribe, the designation of any special use areas with NPS, BLM, and USFWS, and would leave the contributions of the Tribe to the history, culture, and ecology of the region unacknowledged. • Under the No-Action Alternative, the Tribe would continue to be federally recognized, but would not receive any of the benefits associated with having a land base.
POTENTIAL IMPACTS ON NATURAL RESOURCES		
Water Resources	• With implementation of the Preferred Alternative, it is anticipated that new land development, including residential and commercial uses would be introduced on lands that possess surface drainage features. • Monitoring results from the installed well indicate that an adequate supply (10 acre-feet/year) is not available. A lack of sufficient water supply may preclude use of the Centennial parcel.	• Under the No Action Alternative, there would be no beneficial or negative impact on water resources inside and outside the boundaries of Death Valley National Park.

Table S.2.
Summary of Potential Impacts
Timbisha Shoshone Homeland
Final LEIS

	PROPOSED ACTION (ALTERNATIVE 1)	NO-ACTION (ALTERNATIVE 2)
Water Resources (cont.)	• Future, as yet to be identified development (~~mining,~~ residential, commercial) could alter surface water resources in Death Valley in the future and new projects could introduce fill into waters of the U.S.	
Socioeconomics and Environmental Justice	• A major reason for the proposed legislation is to achieve social and economic benefits for the tribe as described in the *Secretarial Report*. These would benefit the tribe, and for revenue-generating activities, would benefit communities, counties and businesses in the region through consumptive purchases.	• The No Action Alternative would not meet the requirements under section 405(b) and the policies and objectives as set forth in the *Secretarial Report*. Social and economic benefits for the Tribe would not be achieved.
Land Use, Recreation, and Wilderness	• The majority of lands subject to the Proposed Action are designated as multiple use; some are designated as wilderness; two parcels are proposed for private acquisition. Recreation is common in these areas. • Implementation of the Preferred Alternative would improve residential land uses at Death Valley National Park by allowing development of modern housing with up-to-date infrastructure and energy-efficient construction.	• The No Action Alternative would not meet the requirements under section 405(b) and the policies and objectives as set forth in the *Secretarial Report*. Recreational, tourism, and residential land uses would not be improved.
Vegetation	• Lands subject to the Proposed Action occur in two physiographic regions differentiated by elevation, latitude, and dominant vegetation. These two regions include the Mojave Desert and the Great Basin geomorphic provinces (Barbour, 1988). The Mojave Desert is located in the rain shadow of the southern Sierra Nevada and Transverse Ranges of California. • Vegetation in the region is dominated by low growing shrub species with morphological and physiological adaptations to	• Under the No Action Alternative, there would be no beneficial or negative impact on vegetation inside and outside the boundaries of Death Valley National Park.

Table S.2.
Summary of Potential Impacts
Timbisha Shoshone Homeland
Final LEIS

	PROPOSED ACTION (ALTERNATIVE 1)	NO-ACTION (ALTERNATIVE 2)
Vegetation (cont.)	survive prolonged periods of drought and high temperatures. • The Preferred Alternative assumes that some loss of plant communities would occur as a consequence of conversion to a developed condition. • Areas known to support sensitive resources ~~have been~~ would be largely avoided, but the potential exists for special-status plant species to occur at several locations, subject to verification by focused surveys during the appropriate seasons.	
Wildlife	• Death Valley National Park and the adjacent desert support a variety of wildlife species, including 51 species of native mammals, 2 species of introduced large mammals, 307 species of birds, 36 species of reptiles, 3 species of amphibians, and 5 species and 1 subspecies of native fishes (Hansen 1972 and 1973; Landye 1973). Small mammals are more numerous than large mammals.~~, such as desert bighorn, coyote, bobcat, mountain lion, and mule deer~~. Mohave ground squirrel was observed at the Centennial parcel (See Appendix X.) • The Preferred Alternative assumes that some loss of habitat for wildlife associated with Mojave Desert plant communities would occur as a consequence of development. • The reduction of wildlife habitat associated with future development on lands to be transferred is considered small in proportion to the abundance of those habitats in the region. The potential exists to adversely affect one or more special-status species.	• Under the No Action Alternative, there would be no beneficial or negative impact on wildlife inside and outside the boundaries of Death Valley National Park.

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USER'S GUIDE

The final Legislative Environmental Impact Statement (LEIS) is comprised of three volumes. For each chapter of the final LEIS, additions, deletions and corrections are indicated by underlined and strikeout text. Volume I provides: the Executive Summary, Introduction, Description of Proposed Action, No Action, and Alternatives Considered But Not Brought Forward, the Description of the Environment and Affected Resources, and the Description of the Potential Environmental Consequences; Volume II provides public comment concerning the draft LEIS, and responses; Volume III provides documents cited in Volume I as an appendix.

The Table of Contents of the final LEIS is arranged to provide a clear and accurate description of the Proposed Action and Alternatives. First, the Executive Summary will provide an overview of the Proposed Action, Alternatives, Affected Environment, and Potential Environmental Consequences. The Executive Summary is not intended to provide the reader with a detailed analysis of the Proposed Action but merely a brief overview of the issues that may potentially impact existing resources. The remainder of the final LEIS (Volume I) is organized under the following chapter headings:

- **1.0—Introduction:** This chapter provides an overview of the intended uses of the LEIS, the Regulatory Authority for preparing the LEIS, the Purpose and Need of preparing an LEIS, the Lead Agencies that will authorize the LEIS, the NEPA process, and applicable laws concerning the LEIS for environmental protection.
- **2.0—Description of Proposed Action, No-Action, and Alternatives Considered But Not Brought Forward for Analysis:** This chapter provides an overview of the Proposed Action, no-action, and Alternatives Considered But Not Brought Forward for Analysis concerning the transfer of several parcels in trust to the Timbisha Shoshone Tribe.
- **3.0—Description of Environment and Affected Resources:** This chapter provides a baseline description of the natural and man-made environment that may be affected by the land transfers in trust or the alternatives.
- **4.0—Description of Potential Environmental Consequences:** This chapter focuses on the potential impacts resulting from implementation of the land transfers in trust or the alternatives. Mitigation measures that would reduce or avoid environmental effects are identified. Impacts that cannot be mitigated are also discussed.
- **5.0—Consultation and Coordination:** This chapter provides a summary of public involvement and identifies individuals who contributed to the preparation of the LEIS.
- **6.0—Acronyms and Glossary Terms:** Terms and acronyms are described as they are used in this document.
- **7.0—Distribution List for the Final LEIS:** This chapter provides the mailing list for the final LEIS.
- **8.0—References:** This chapter provides a list of references used for the preparation of this document.
- **9.0—Index:** This chapter provides a list of terms used in this document and referenced section and page number.

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TIMBISHA SHOSHONE HOMELAND
FINAL LEGISLATIVE ENVIRONMENTAL IMPACT STATEMENT

VOLUME I

TABLE OF CONTENTS

Section **Page**

ABSTRACT

COVER LETTER

S.0 EXECUTIVE SUMMARY

S.1 Introduction..... i
S.2 Overview of the Proposed Action..... ii
S.3 Summary of Affected Resources..... iii
S.4 Summary of Potential Environmental Consequences..... vi
Table S.1. Summary of Proposed Action and Alternatives..... x
Table S.2. Summary of Potential Impacts..... xiii

USER'S GUIDE..... xvii

1.0 INTRODUCTION..... 1
1.1 Intended Uses of the LEIS..... 1
1.2 Regulatory Authority for Proposed Action..... 3
1.3 Purpose and Need..... 4
1.4 NEPA Process and Lead Agency Authorization..... 6
1.4.1 Summary of Public Involvement..... 6
1.4.2 Public Notices..... 6
1.4.3 Public Review of the Final LEIS..... 6
1.4.4 Agency Decision and Authorizations..... 7
1.4.5 ~~Record of Decision~~Summary of Recommendations..... 8
1.5 Applicable Laws for Environmental Protection..... 9
1.6 Topics Considered but Dismissed from Further Analysis..... 10
1.7 Methodologies..... 11

2.0 DESCRIPTION OF PROPOSED ACTION, NO ACTION, AND ALTERNATIVES CONSIDERED BUT NOT BROUGHT FORWARD FOR ANALYSIS..... 13
2.1 Summary of the Proposed Action..... 14
2.2 Elements and Locations of the Preferred Alternative..... 15
2.2.1 **National Park Service**..... 15
2.2.1.1 Land Transfer in Trust..... 15
2.2.1.2 Proposed Authorization of Private Land Acquisition..... 15
2.2.1.3 Tribal Cooperative Activity/Special Use Areas..... 16
2.2.1.3.1 Furnace Creek Tribal Cooperative Activity Areas..... 16
2.2.1.3.2 Timbisha Shoshone Natural and Cultural Preservation Area..... 16
2.2.1.3.3 Other Special Use Areas..... 17
2.2.2 **Bureau of Land Management**..... 18
2.2.2.1 Land Transfers in Trust..... 18

2.2.2.2 Proposed Authorization of Private Land Acquisition 19
2.2.2.3 Tribal Cooperative Activity/Special Use Areas 20
2.2.3 **United States Fish and Wildlife Service** 21
2.2.3.1 Tribal Cooperative Activity Area 21
2.3 No Action Alternative 22
2.4 Alternative's Considered But Not Brought Forward for Analysis 23

3.0 DESCRIPTION OF ENVIRONMENT AND AFFECTED RESOURCES 27
3.1 Introduction 27
3.2 Cultural Resources 28
3.2.1 Current Tribal Status 28
3.2.2 Site-Specific Cultural Resources 28
3.2.2.1 **National Park Service** 28
3.2.2.1.1 Land Transfer in Trust 28
3.2.2.1.2 Proposed Authorization of Private Land Acquisition 30
3.2.2.1.3 Tribal Cooperative Activity/Special Use Areas 31
3.2.2.2 **Bureau of Land Management** 33
3.2.2.2.1 Land Transfers in Trust 33
3.2.2.2.2 Proposed Authorization of Private Land Acquisition 34
3.2.2.2.3 Tribal Cooperative Activity/Special Use Areas 35
3.2.2.3 **United States Fish and Wildlife Service** 36
3.2.2.3.1 Tribal Cooperative Activity Area 36
3.3 Water Resources 37
3.3.1 Regional Setting 37
3.3.1.1 Water Resources 37
3.3.1.2 Water Rights 39
3.3.2 Site-Specific Water Supply 41
3.3.2.1 **National Park Service** 42
3.3.2.1.1 Land Transfer in Trust 42
3.3.2.1.2 Proposed Authorization of Private Land Acquisition 44
3.3.2.1.3 Tribal Cooperative Activity/Special Use Areas 45
3.3.2.2 **Bureau of Land Management** 46
3.3.2.2.1 Land Transfers in Trust 46
3.3.2.2.2 Proposed Authorization of Private Land Acquisition 52
3.3.2.2.3 Tribal Cooperative Activity/Special Use Areas 53
3.3.2.3 **United States Fish and Wildlife Service** 53
3.3.2.3.1 Tribal Cooperative Activity Area 53
3.4 Socioeconomics and Environmental Justice 55
3.4.1 Regional Setting 55
3.4.2 Population and Demography 56
3.4.3 Economy and Employment 58
3.4.4 Housing 59
3.4.5 Schools 59
3.4.6 Utilities and Services 60
3.4.7 Environmental Justice 60
3.5 Land Use, Recreation, and Wilderness 62
3.5.1 Regional Setting 62
3.5.2 Site-Specific Land Use Practices 63
3.5.2.1 **National Park Service** 64
3.5.2.1.1 Land Transfer in Trust 64
3.5.2.1.2 Proposed Authorization of Private Land Acquisition 64

3.5.2.1.3 Tribal Cooperative Activity/Special Use Areas....65
3.5.2.2 **Bureau of Land Management**....66
3.5.2.2.1 Land Transfers in Trust....66
3.5.2.2.2 Proposed Authorization of Private Land Acquisition....66
3.5.2.2.3 Tribal Cooperative Activity/Special Use Areas....67
3.5.2.3 **United States Fish and Wildlife Service**....67
3.5.2.3.1 Tribal Cooperative Activity Area....67
3.6 Vegetation....68
3.6.1 Regional Setting....68
3.6.1.1 Flora....68
3.6.1.2 Plant Communities....68
3.6.1.3 Methodology....70
3.6.2 Site-Specific Plant Community Descriptions....70
3.6.2.1 **National Park Service**....70
3.6.2.1.1 Land Transfer in Trust....70
3.6.2.1.2 Proposed Authorization of Private Land Acquisition....71
3.6.2.1.3 Tribal Cooperative Activity/Special Use Areas....71
3.6.2.2 **Bureau of Land Management**....74
3.6.2.2.1 Land Transfers in Trust....74
3.6.2.2.2 Proposed Authorization of Private Land Acquisition....76
3.6.2.2.3 Tribal Cooperative Activity/Special Use Areas....76
3.6.2.3 **United States Fish and Wildlife Service**....76
3.6.2.3.1 Tribal Cooperative Activity Area....76
3.6.3 Special Status Plant Species....77
3.7 Wildlife....78
3.7.1 Regional Setting....78
3.7.1.1 Fauna....78
3.7.1.2 Special-Status Species....79
3.7.1.3 Methodology....79
3.7.2 Site-Specific Setting....80
3.7.2.1 **National Park Service**....80
3.7.2.1.1 Land Transfer in Trust....80
3.7.2.1.2 Proposed Authorization of Private Land Acquisition....81
3.7.2.1.3 Tribal Cooperative Activity/Special Use Areas....81
3.7.2.2 **Bureau of Land Management**....82
3.7.2.2.1 Land Transfers in Trust....82
3.7.2.2.2 Proposed Authorization of Private Land Acquisition....84
3.7.2.2.3 Tribal Cooperative Activity/Special Use Areas....85
3.7.2.3 **United States Fish and Wildlife Service**....85
3.7.2.3.1 Tribal Cooperative Activity Area....85

4.0 DESCRIPTION OF POTENTIAL ENVIRONMENTAL CONSEQUENCES....89
4.1 Introduction....89
4.2 Cultural Resources....92
4.2.1 Preferred Alternative....92
4.2.2 No-Action Alternative....92
4.3 Water Resources....93
4.3.1 Preferred Alternative....93
4.3.2 No-Action Alternative....96
4.4 Socioeconomics and Environmental Justice....97
4.4.1 Preferred Alternative....97

4.4.2 No-Action Alternative 100
4.5 Land Use, Recreation, and Wilderness 101
4.5.1 Preferred Alternative 101
4.5.2 No-Action Alternative 102
4.6 Vegetation 103
4.6.1 Preferred Alternative 103
4.6.2 No-Action Alternative 105
4.7 Wildlife 106
4.7.1 Preferred Alternative 106
4.7.2 No-Action Alternative 108

5.0 CONSULTATION AND COORDINATION 109
5.1 History of Public Involvement 109
5.2 List of Prepares 111
5.3 List of Individuals Consulted 113

6.0 ACRONYMS AND GLOSSARY OF TERMS 115

7.0 DISTRIBUTION LIST FOR THE FINAL LEIS 129

8.0 REFERENCES 141

9.0 INDEX 155

LIST OF TABLES

Table

T1	Demographic and Socioeconomic Characteristics
T2	Employment and Payrolls by Major Industry Group
T3	Housing and Occupancy
T4	Public Schools in the Region of Influence
T5	Providers of Utilities
T6	Health and Emergency Services
T7	Contribution of Various Projects to Nye County
T8	CDCA Land Classifications
T9	Common Plant Species
T10	Sensitive Plant Species
T11	Common Wildlife Species
T12	Special-Status Sensitive Wildlife Species

LIST OF FIGURES

Figure

F1	Water Resources—Groundwater Recharge Areas, Groundwater Discharge Areas
F2	Water Resources—Schematic Sections Across Mountain Ranges & Intervening Basins
F3	Water Resources—Hydrogeologic Unit & Water Yielding Properties

LIST OF LEGISLATIVE MAPS

Map

1	Community Development at Furnace Creek, Death Valley National Park
2	Death Valley Junction, California
3	Centennial, California
4	Scotty's Junction, Nevada
5	Lida Community Parcel, Nevada

LIST OF NON-LEGISLATIVE MAPS

Map

6	Furnace Creek Cooperative Activity Areas
7	Timbisha Shoshone Tribal Cooperative Activity/ Special Use Areas
8	Timbisha Shoshone Homeland
9	Parcels Subject to the Proposed Authorization of Private Land Acquisition
10	Regional Land Use Designations
11	NPS, BLM, and USFWS Jurisdiction Over Lands Subject to the Proposed Action

PUBLIC COMMENT AND RESPONSES
(Provided in Volume II)

1.0 INTRODUCTION
2.0 PUBLIC COMMENT LETTERS
3.0 PUBLIC COMMENT RESPONSES
4.0 INDICES
4.1 Index by Author
4.2 Index by LEIS Letter Number
4.3 Index by Topic

APPENDICES
(Provided in Volume III)

Appendix

Appendix A	California Desert Protection Act (Public Law 103-433) Sections Relevant to Death Valley National Park
Appendix B	Land Protection Plan For Death Valley National Park
Appendix C	Timbisha Shoshone Homeland Legislative Environmental Impact Statement Definitions of Uses and Activities
Appendix D	United States Department of the Interior, Bureau of Land Management, National Park Service – Final Scoping Summary Document for the Proposed Timbisha Shoshone Tribal Homeland Draft Report
Appendix E	Ground Water Resource Issues of Death Valley National Park Related to Timbisha Shoshone Proposed Reservation
Appendix F	Letter to Nye County Granting Cooperator Status
Appendix G	106th Congress 2D Session S. 2102 – Timbisha Shoshone Homeland Act
Appendix H	Letter from Nevada Natural Heritage Program, Department of Conservation and Natural Resources
Appendix I	Memorandum from Natural Resources Consulting Engineers Regarding Preliminary Non-Agricultural Water Needs Assessment
Appendix J	Applicable Laws for Environmental Protection
Appendix K	Geology
Appendix L	Noise
Appendix M	Transportation
Appendix N	Visual Resources
Appendix O	Air Quality
Appendix P	Historical Tribal Use
Appendix Q	Plans and Policies
Appendix R	Tom Bellinger, Lower Centennial Flat Groundwater Exploration Drill Hole
Appendix S	The Timbisha Shoshone Tribal Homeland: A ~~Final~~ Draft Secretarial Report To Congress To Establish A Permanent Tribal Land Base and Related Cooperative Activities
Appendix T	Timbisha Shoshone Tribe, "Tribal Needs Assessment and Socio-Economic Profile"
Appendix U	Federal Register ~~Document~~ Scoping Noitice
Appendix V	Technical Report—Darwin Water Supply and Lower Centennial Flat Water Resource Evaluation
Appendix W	Hector Villalobos (BLM); Tom Bellinger (BOR), Results of Recent Centennial Parcel Well Bailing Operations as Related to the Timbisha Shoshone Homeland
Appendix X	Mohave Ground Squirrel Investigation, Lower Centennial Flat, Inyo Co., California
Appendix Y	Desert Tortoise Survey, Death Valley Junction, Inyo Co., California
Appendix Z	Desert Tortoise Survey, Scotty's Junction, Nye Co., Nevada

1.0 INTRODUCTION

1.1 INTENDED USES OF THE LEIS

This document is referred to as a final Legislative Environmental Impact Statement (LEIS) and has been prepared in accordance with the National Environmental Policy Act (NEPA) of 1969. (42 U.S.C.A. 4332(2)(C); See also 40 C.F.R 1508.9). NEPA and regulations created by the Council on Environmental Quality (CEQ) (40 C.F.R 1508.9) provides that any "proposal for legislation" must be accompanied by an Environmental Impact Statement (EIS). (42 U.S.C.A. 4332(2)(C).) A Legislative Environmental Impact Statement (LEIS) is an abbreviated version of the typical EIS process and may be prepared on an expedited timetable to ensure proper consideration in Congressional hearings and deliberations. Special rules apply to the preparation and review of an LEIS, pursuant to 40 C.F.R 1506.8, which states as follows:

(a) The NEPA process for proposals for legislation (Section 1508.17) significantly affecting the quality of the human environment shall be integrated with the legislative process of the Congress. A Legislative Environmental Impact Statement is the detailed statement required by law to be included in a recommendation or report on a legislative proposal to Congress. A Legislative Environmental Impact Statement shall be considered part of the formal transmittal of a legislative proposal to Congress; however, it may be transmitted to Congress up to 30 days later in order to allow time for completion of an accurate statement which can serve as the basis for public and Congressional debate. The statement must be available in time for congressional hearings and deliberations.

(b) Preparation of a Legislative Environmental Impact Statement shall conform to the requirements of these regulations except as follows:
   (1) There need not be a scoping process.
   (2) The legislative statement shall be prepared in the same manner as a final statement, but shall be considered the "detailed statement" required by statute; provided, that when any of the following conditions exist both the final and final Environmental Impact Statement on the legislative proposal shall be prepared and circulated as provided by Sections 1503.1 and 1506.10.
      (i) A Congressional committee with jurisdiction over the proposal has a rule requiring both final and final Environmental Impact Statement.
      (ii) The proposal results from a study process required by statute (such as those required by the Wild and Scenic Rivers Act (16 U.S.C. 1271 et seq.) and the Wilderness Act (16 U.S.C. 1131 et seq.).
      (iii) Legislative approval is sought for federal or federally assisted construction or other projects which the agency recommends be located at specific geographic locations. For proposals requiring an environmental impact statement for the acquisition of space by General Services Administration, a final statement shall accompany the Prospectus or the 11(b) Report of Building Project Surveys to the Congress, and a final statement shall be completed before site acquisition.
      (iv) The agency decides to prepare final and final statements.

(c) Comments on the legislative statement shall be given to the lead agency, which shall forward them along with its own responses to the Congressional committees with jurisdiction.

This document is intended to fulfill the format and content requirements as well as the spirit of NEPA.

The LEIS analyzes the Proposed Action and the No-Action Alternatives (described in Chapter 2.0) and their potential effects on the human environment pursuant to the California Desert Protection Act (C.D.P.A., [Public Law 103–433]) Title VII, Section 705(b), and in accordance with NEPA. (42 U.S.C.A. 4332(2)(C).) The analysis is limited to the Proposed Action of land transfers in trust and does not address in detail future uses or activities subject to future cooperative agreements. Cooperative activities identified in *Timbisha Shoshone Tribal Homeland—A ~~Final~~ Draft Secretarial Report to Congress to Establish a Permanent Tribal Land Base and Related Cooperative Activities* and the Proposed Action would be subject to all applicable acts, codes, rules, and regulations at the time the cooperative agreements are completed.

National Park Service Consessions Management Improvement Act of 1998 directs development of concession activities as necessary and appropriate for public use and enjoyment. The Act is not considered to be applicable on trust lands. Should any or all of the federal lands identified in the LEIS to be transferred in trust to the Secretary of the Interior for the Timbisha Shoshone Homeland, any economic opportunities for development on those lands would fall outside existing policies for concessions, unless otherwise provided for in authorizing legislation.

1.2 REGULATORY AUTHORITY FOR PROPOSED ACTION

The United States is considering the transfer of federal lands and acquisition of private lands to be held in trust for the Timbisha Shoshone Tribe by the United States Secretary of the Interior. The transfers and acquisitions would be for the purpose of creating a tribal homeland in and around Death Valley National Park pursuant to the study authorized by Section 705(b) of the California Desert Protection Act of 1994. The Tribe has been federally recognized since 1983, but has no land base.

For decades the Tribe has sought to obtain trust land within its aboriginal homeland. In 1994, Congress enacted the California Desert Protection Act (C.D.P.A., [Public Law 103–433]), including Section 705(b), which began to address the need for a recognized land base for the Tribe.

Section 705(b) directs the Secretary of the Interior to conduct a study to identify lands suitable for a reservation for the Timbisha Shoshone Tribe. This section provides:

(1) The Secretary, in consultation with the Timbisha Shoshone Tribe and relevant federal agencies, shall conduct a study, subject to the availability of appropriations, to identify lands suitable for a reservation for the Timbisha Shoshone Tribe located within the Tribe's aboriginal homeland area within and outside the boundaries of Death Valley National Park, as described in Title III of this act.
(2) Not later than one year after the date of enactment of this Title, the Secretary shall submit a report to the Committee on Energy and Natural Resources and the Committee on Indian Affairs of the United States Senate, and the Committee on Natural Resources of the United States House of Representatives on the results of the study conducted under paragraph (1).

The Secretary of the Interior's ~~final~~ report, *Timbisha Shoshone Tribal Homeland—A ~~Final~~ Draft Secretarial Report to Congress to Establish a Permanent Tribal Land Base and Related Cooperative Activities*, proposed several recommendations that could not be accomplished by the Department of the Interior without Congressional authorization and proposed legislation.

The National Environmental Policy Act (NEPA) of 1969 and regulations of the Council on Environmental Quality (40 C.F.R 1508.9) provide that any "proposal for legislation" must be accompanied by an EIS. (42 U.S.C.A. 4332(2)(C).) Accordingly, the National Park Service, in consultation with the Bureau of Land Management, the Bureau of Indian Affairs, and the Bureau of Reclamation, is authorized to and has prepared this LEIS to analyze the Proposed Action and the No-Action Alternative and their impacts on the environment pursuant to the California Desert Protection Act (C.D.P.A., [Public Law 103–433]) Title VII, Section 705, and in accordance with NEPA. (*Id.*).

The National Park Service (NPS) is acting as the federal lead agency for this LEIS;. ~~In October 1999, the Department of the Interior (DOI) determined that NPS would serve as the lead agency and that the~~ Bureau of Land Management (BLM) ~~would be~~is a cooperating agency. ~~to implement the requirements of the National Environmental Policy Act~~. As jurisdictional agencies of federal lands currently under consideration for this project, NPS and BLM are responsible for determining any environmental impacts that may be associated with possible land transfer activities. The agencies are also responsible for determining appropriate mitigation measures. Other cooperating agencies acting in the preparation of this document include the Bureau of Reclamation (BOR), Bureau of Indian Affairs (BIA), and Nye County, Nevada.

1.3 PURPOSE AND NEED

The action considered in this Legislative Environmental Impact Statement is a set of recommendations for congressional legislation to authorize establishment of a permanent land base for the Timbisha Shoshone Tribe, and to identify locations on federal lands within the Tribe's ancestral homeland for purposes of tribal use pursuant to cooperative agreements. This action is pursuant to Section 705(b) of the California Desert Protection Act of 1994 (C.D.P.A., [Public Law 103–433]). Section 705(b) directed the Secretary of the Interior to investigate the possibility of establishing a tribal homeland for the Timbisha Shoshone.

In January 1995, a federal and tribal negotiating team was established to develop an integrated, comprehensive plan to complete a suitability study. The tribal team was composed of Timbisha Shoshone tribal officials and consultants. The federal team members were drawn from the headquarters, regional, and field offices of the Assistant Secretary for Fish and Wildlife and Parks, Bureau of Land Management, Bureau of Indian Affairs, Office of American Indian Trust, Bureau of Reclamation, and National Park Service. The tribal negotiating team leader was Tribal Chairperson Pauline Esteves. The federal negotiating team leader was John Reynolds, Director, Pacific West Region, National Park Service. Professor Charles Wilkinson of the University of Colorado Law School facilitated the process. Further information concerning the federal and tribal negotiation team meetings is provided in Chapter 5.0, "Consultation and Coordination."

The federal and tribal negotiating team produced the *Secretarial Report,* which includes a number of recommended actions (based upon specific criteria) that would establish a land base, ensure tribal access to other lands significant to the history and culture of the Tribe, and establish a framework to enable the Tribe to carry on certain tribal traditions in portions of their ancestral homeland.

Consistent with the recommendations of the *Secretarial Report*, the Proposed Action is intended to achieve the following:

- Provide land in trust wherein the Tribe can live permanently and govern its own affairs in a modern community within their ancestral homeland, which lies both outside and inside Death Valley National Park.

- Ensure that the resources inside and outside the boundaries of Death Valley National Park are protected and enhanced by cooperative activities within the Tribe's ancestral homeland and partnerships between the Tribe and the National Park Service and partnerships involving the Bureau of Land Management and United States Fish and Wildlife Service (USFWS).

- Ensure that such activities are not in derogation of the purposes and values for which the Death Valley National Park was established.

- Provide opportunities for a richer visitor experience within and outside Death Valley National Park and in certain areas administered by the Bureau of Land Management.

- Provide appropriate opportunities for economically viable and ecologically sustainable visitor-related development by the Tribe within and outside Death Valley National Park.

In terms of providing a permanent land base for the Tribe, the first primary purpose of the Proposed Action is to request that Congress authorize the transfer of several parcels as identified in the *Secretarial Report*. The legislation would also authorize the purchase, by the Department of the Interior, of several parcels (approximately 2,550 acres) of private land from willing sellers in California and Nevada. All

transacted lands would be held in trust for the Timbisha Shoshone Tribe by the Secretary of the Interior. These lands would be used for development, establishment of tribal communities, residence areas, and for traditional tribal activities and ceremonies.

The second primary element of the Proposed Action consists of cooperative agreements between the Tribe and NPS, BLM, and USFWS. These agreements would provide the Tribe with access to and use of certain ~~designated~~ specified areas under the jurisdiction of NPS, BLM, and USFWS for cooperative activities with the intent of maintaining and enhancing the biological and cultural values of ~~the designated~~ those areas. All cooperative agreements would comport with objectives described in management plans for the ~~designated~~ specified areas, and shall comply with applicable state and federal regulations.

The need for the Proposed Action is implicit in the stated purpose. The Timbisha Shoshone Tribe once occupied a very large and diverse landscape in and surrounding the area now known as Death Valley National Park. The Tribe has been living in the Death Valley area, and surrounding lands for millennia, with a deep attachment to the land and traditional practices that benefited the Tribe and influenced the ecology of Death Valley and a substantial portion of the Mojave Desert.

As with virtually all Native American groups, the Timbisha Shoshone people were displaced from their ancestral homeland and traditional way of life with the westward expansion of the United States. The Tribe currently has no land base and no formal agreements with federal agencies to use ancestral lands for tribal activities and ceremonies. The establishment of a tribal homeland and viable tribal communities and the development of cooperative agreements would serve to rectify the Tribe's current condition. ~~Designation~~ Establishment of a tribal homeland would allow the Tribe to exercise self-determination as a sovereign nation, establish economic sustainability, and establish tribal eligibility for special programs for the benefit of Native Americans.

The Proposed Action also addresses NPS's need to more fully incorporate the cultural history, values, and activities of the Timbisha Shoshone Tribe into the overall management of Death Valley National Park. The Tribe's occupation of this desert land shaped the cultural practices of the Tribe and left an imprint on the land. The Tribe would play an irreplaceable role in the interpretation of Park features and resources, provide a living link to the distant past, and enrich the experience of Park visitors.

1.4 NEPA PROCESS AND LEAD AGENCY AUTHORIZATION

This document has been prepared to meet requirements for an LEIS, in compliance with NEPA (40 C.F.R., Parts 1500–1508; DOI Departmental Manual; BLM NEPA Handbook H–1790–1; and NPS–12; NEPA Handbook).

The following will detail the NEPA process and lead agency roles in authorizing and adopting the LEIS.

1.4.1 Summary of Public Involvement

The LEIS efforts began in July 1999. Discussions focused on the level of environmental assessment and the document's production schedule. (For a detailed discussion of and Public Involvement, see Chapter 5.0, "Consultation and Coordination.")

Between April and July 1999 over 500 public comment letters were received in response to the release of the *Timbisha Shoshone Tribal Homeland—A ~~Final~~ Draft Secretarial Report to Congress to Establish a Permanent Tribal Land Base and Related Cooperative Activities* report in April 1999. In September 1999, a final scoping summary document was prepared detailing a wide range of regulatory, socioeconomic, and environmental issues (Appendix D).

The draft LEIS was the product of all the activities described above. A total of five public meetings were held in summer 2000 to obtain comments and further refine the LEIS. The LEIS was made available at the Death Valley National Park headquarters, BLM offices, and regional libraries. To better manage printing and mailing costs, the draft LEIS was distributed only to those responding to a mail-back inquiry in February 2000 updating the Death Valley National Park mailing list. The draft LEIS was also made available for review on the Internet at http://www3.iwvisp.com/blm/report.

1.4.2 Public Notices

Announcing a Notice of Intent (NOI) to prepare an LEIS is the first formal step in LEIS preparation.

A NOI to prepare an LEIS was published in the *Federal Register* in March 2000 and was circulated to local, state, and federal agencies and other interested parties. A Notice of Availability (NOA) for the draft LEIS was published in the Federal Register May 19, 2000.

1.4.3 Public Review of the Draft LEIS

The lead agency worked with the cooperating agencies to obtain their comments regarding the scope of the draft LEIS. (42 U.S.C. 4332(2)(C).) The draft LEIS contained all of the required contents specified in NEPA and disclosed and discussd all major points of view on the environmental impacts and alternatives. (40 C.F.R. 1502.9(a).)

After preparing the draft LEIS, the lead agency obtained the comments of other federal agencies with jurisdiction by law over, or special expertise with regard to, the Proposed Action, or agencies that are authorized to develop and enforce environmental standards. Such agencies were required to comment on the final LEIS. (40 C.F.R. 1503.1(a), 1503.2.)

The comment period of the draft LEIS was initially from May 19 through July 30. The comment period was extended twice: from July 30 through August 10; and from August 10 through August 21.

1.4.4 Agency Decisions and Authorizations

When a lead agency determines that the LEIS meets the standards for an adequate statement under CEQ NEPA regulations, it may adopt the LEIS. (40 C.F.R. 1056.3(a). A cooperating federal agency may adopt the LEIS prepared by the lead agency if, after independently reviewing the statement, it concludes that its comments and suggestions have been satisfied. When adopting another agency's LEIS, the cooperating agency need not recirculate the statement for public review. (40 C.F.R. 1506.3(c)). The following discussion describes the roles of the lead and cooperating agencies that must authorize and adopt the LEIS in order for the Proposed Action to be implemented.

National Park Service

The National Park Service preserves the natural and cultural resources and values of the National Park System for the enjoyment, education, and inspiration of present and future generations. NPS cooperates with partners to extend the benefits of natural and cultural resource conservation and outdoor recreation throughout this country and the world at the direction of DOI. NPS is the federal lead agency for this LEIS.

Death Valley National Park manages the land at Furnace Creek that is proposed to be transferred to the Secretary of the Interior to be held in trust for the Tribe. Further, two of the private parcels proposed for acquisition and transfer are inholdings within the boundaries of the Park.

The areas proposed for Tribal use and cooperative activities within the Park include a Tribal Mesquite Use Area and Buffer Areas at Furnace Creek, and special use areas at Hunter Mountain, Wildrose, Saline Valley Warm Springs, Mesquite Springs, and Daylight Pass.

Bureau of Land Management

The Bureau of Land Management, an agency within the U.S. Department of the Interior, administers 264 million acres of America's public lands, located primarily in the 12 western states. BLM sustains the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations. BLM is a cooperating agency in the preparation of this LEIS.

The Proposed Action calls for BLM to transfer 7,240 acres in five parcels to the Secretary of the Interior to be held in trust for the Tribe. The Barstow Field Office manages the parcel located at Death Valley Junction, California, east of the Park. The Ridgecrest Field Office manages the parcel located at Centennial, California, west of the Park. The Tonopah Field Station manages the parcels located at Scotty's Junction, northeast of the Park, and the Lida Community parcel at Lida Summit, north of the Park; these parcels are located in Nevada. Lida Ranch, a private parcel proposed for acquisition and transfer, is located within the jurisdictional boundaries of the Tonopah Field Station. The station also manages the Lida Tribal Use Area, which is proposed for Tribal use and cooperative activities.

U.S. Fish and Wildlife Service

The U.S. Fish and Wildlife Service is the principal federal agency responsible for conserving, protecting, and enhancing fish, wildlife, and plants and their habitats for the continuing benefit of the American people. USFWS manages the 93 million-acre National Wildlife Refuge System comprising more than 500 national wildlife refuges, thousands of small wetlands, and other special management areas. It also operates over 60 national fish hatcheries and fish and wildlife management assistance offices, plus nearly 80 ecological services field stations and numerous law enforcement offices. Among its key functions, USFWS enforces federal wildlife laws, protects endangered species, manages migratory birds, restores

nationally significant fisheries, conserves and restores wildlife habitat such as wetlands, and helps foreign governments with their international conservation efforts.

USFWS manages the Ash Meadows National Refuge, which is proposed for tribal cooperative activities.

Bureau of Indian Affairs

The mission of the Bureau of Indian Affairs is to enhance the quality of life, promote economic opportunity, and protect and improve the trust assets of Native Americans and their tribes. BIA accomplishes this through the delivery of quality services, maintaining government-to-government relationships within the spirit of self-determination for Native Americans.

Nye County, Nevada

Nye County, Nevada, requested and was granted cooperator status by the Department of the Interior. Nye County is the situs county of the Scotty's Junction parcel.

1.4.5 ~~Record of Decision~~ Summary of Recommendations

After the final LEIS is distributed, NPS and BLM will prepare a summary of recommendations which will be forwarded to the Department of Interior. The summary of recommendations will include a discussion of actions to be undertaken to implement provisions of the legislation. ~~completed, the lead agency and cooperating agencies prepare a Record of Decision explaining what decision has been made. The ROD includes an explanation of alternatives that were considered, and a summary of the environmental consequences of the Proposed Action. As applicable, the ROD also states which mitigation measures were or were not adopted, and how adopted mitigation measures are to be enforced and monitored. (40 C.F.R. 1505.2.)~~

~~As a non-delegated project, the Secretary of the Interior has signing authority of the ROD. At the time the ROD is signed, the Preferred Environmental Alternative would be identified~~.

1.5 APPLICABLE LAWS FOR ENVIRONMENTAL PROTECTION

Various aspects of the Timbisha Shoshone Homeland ~~must be in compliance~~ would be required to comply with applicable federal and state environmental requirements. Numerous acts, codes, rules, and regulations involving environmental issues are referenced in Chapters 3.0 and 4.0. Applicable acts, codes, rules, and regulations are provided in Appendix J, "Applicable Laws for Environmental Protection."

1.6 TOPICS CONSIDERED BUT DISMISSED FROM FURTHER ANALYSIS

This Legislative Environmental Impact Statement analyzes the Proposed Action and the No-Action Alternative and their potential effects on the environment pursuant to the California Desert Protection Act (C.D.P.A., [Public Law 103–433]) Title VII, Section 705(b), and in accordance with NEPA. (42 U.S.C.A. 4332(2)(C).) The analysis is limited to the Proposed Action of land transfers in trust and not potential uses or development subject to future cooperative agreements. Cooperative activities identified in the *Secretarial Report* and the Proposed Action would be subject to all applicable acts, codes, rules, and regulations at the time cooperative agreements are completed.

The following topics were considered but dismissed as not substantially affected by the proposed land transfers:

- Geology
- Noise
- Transportation
- Visual Resources
- Air Quality

As a matter of convenience, a discussion of these topics has been provided in Appendices K-P.

1.7 METHODOLOGIES

As required by NEPA (42 U.S.C.A. 4332(2)(C)), this LEIS provides a discussion of regional and local conditions to allow a comprehensive evaluation of the potential impacts related to the proposed land transfers in trust. In accordance with the proposed legislation and the *Secretarial Report*, the Proposed Action involves land transfers only. Because the proposed tribal cooperative activities/special use areas and lands subject to authorization of private land acquisition do not involve permanent development, a detailed evaluation of resources for ~~these~~ areas subject to cooperative agreements was not conducted as part of this LEIS.

In addition, cooperative activities identified in the *Secretarial Report* and the Proposed Action would be subject to all applicable acts, codes, rules, and regulations at the time a cooperative agreement is completed. As a result, the impact analysis ~~will be limited to the~~ has been focused primarily on the Proposed Action of land transfers in trust and not potential uses ~~or development~~ subject to future cooperative agreements.

In preparing this LEIS, lead agency staff and contractors gathered and reviewed relevant public documents, performed California Natural Diversity Database and Nevada Natural Heritage Program research, and incorporated input from agency staff at BLM, NPS, and USFWS. Site reconnaissance surveys were conducted on January 18 through 21 and February 23 and 24, 2000. Additional surveys for Mohave ground squirrel were conducted on June 21 and 22, 2000. Focused surveys for Mojave desert tortoise were conducted during the period from July 4 through July 31 at Scotty's Junction, Nevada and from August 3 through August 7, 2000 at Death Valley Junction, California. Also, additional water investigations were conducted by the Bureau of Reclamation (Appendices R and W) and by Harding Lawson Associates (Appendix V.) The evaluation of groundwater resources at Centennial Flat, and the potential relation between those resources and springs supplying water to the community of Darwin were prepared in June and July, 2000. The Technical Water Report was published in July 19, 2000.

The actions considered in this document reflect the agreements reached by the federal and tribal negotiating team.

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2.0 DESCRIPTION OF PROPOSED ACTION, NO ACTION, AND ALTERNATIVES CONSIDERED BUT NOT BROUGHT FORWARD FOR ANALYSIS

The Proposed Action is to establish a permanent tribal land base and related cooperative activities within the Timbisha Shoshone Tribe's ancestral homeland. Section 2.1 summarizes the major elements of the proposed action. Section 2.2 provides details of the proposed land transfers and cooperative activities that constitute the Preferred Alternative. This action is pursuant to Section 705(b) of the California Desert Protection Act of 1994 (C.D.P.A., [Public Law 103–433]). Section 705(b) directed the United States Secretary of the Interior to investigate the possibility of establishing a tribal homeland for the Timbisha Shoshone Tribe.

In January 1995, a federal and tribal negotiating team was established to develop an integrated, comprehensive plan to complete a suitability study. The tribal team was composed of Timbisha tribal officials and consultants. The federal team members were drawn from the headquarters, regional, and field offices of the Assistant Secretary for Fish and Wildlife and Parks, Bureau of Land Management, Bureau of Indian Affairs, Office of American Indian Trust, Bureau of Reclamation, and National Park Service. The tribal negotiating team leader was Tribal Chairperson Pauline Esteves. The federal negotiating team leader was John J. Reynolds, Director, Pacific West Region, National Park Service. Professor Charles Wilkinson of the University of Colorado Law School facilitated the process. Further information concerning the federal and tribal negotiation team meetings are provided in Chapter 5.0, "Consultation and Coordination."

The federal and tribal negotiating team produced the final report, *The Timbisha Shoshone Tribal Homeland—A ~~Final~~ Draft Secretarial Report to Congress to Establish a Permanent Tribal Land Base and Related Cooperative Activities*, which includes a number of recommended actions (based upon specific criteria) that would enable the Tribe to establish a land base, ensure tribal access to other lands significant to the Tribe's history and culture, and establish a framework to enable the Tribe to carry on elements of a traditional tribal way of life within their ancestral homeland.

Consistent with the criteria used to select potential suitable lands to be held by the BIA in trust for the Tribe as set forth in the *Secretarial Report* (Appendix S), the Proposed Action is intended to achieve the following:

- Provide land in trust wherein the Tribe can live permanently and govern its own affairs in a modern community within their ancestral homeland, which lies both outside and inside Death Valley National Park.

- Ensure that resources inside and outside the boundaries of Death Valley National Park are protected and enhanced by cooperative activities within the Tribe's ancestral homeland and partnerships between the Tribe and the National Park Service and partnerships involving the Bureau of Land Management.

- Ensure that such activities are not in derogation of the purposes and values for which Death Valley National Park was established.

- Provide opportunities for a richer visitor experience within and outside Death Valley National Park and in certain areas administered by the Bureau of Land Management.

The parcels identified for land transfer were selected with consideration of the following suitability criteria as set forth in the *Secretarial Report*:

- The historical tribal relationship to the land;
- Effects of climate and geography;
- Availability of water and existence of natural resources;
- Availability of infrastructure, such as roads, power lines, and other public service;
- The potential for sustainable tribal development;
- Potential for housing;
- Compatibility with existing land uses;
- Special land use designations such as National Park land, Wilderness, critical habitat, and areas of critical environmental concern;
- Existing encumbrances such as mining claims, leases, and rights-of-way; and,
- The Tribe's historical residential and cultural use areas.

(*Secretarial Report*, Appendix S.)

2.1 SUMMARY OF THE PROPOSED ACTION

Overall, the Proposed Action requests authorization to transfer approximately 7,500 acres of federal lands, and to purchase several privately held parcels of federal land to be taken into trust for the Tribe by the U.S. Secretary of the Interior. In addition, the Proposed Action directs NPS, BLM, USFWS, and the Tribe to negotiate and enter into cooperative agreements, using existing authorities, for tribal access to and use of certain lands of particular cultural and historical significance to the Tribe. The authority to manage these lands would be retained by the respective agencies. In acknowledging the contributions of the Tribe to the history, culture, and ecology of the region, the action calls for the ~~designation~~ recognition of a Timbisha Shoshone Natural and Cultural Preservation Area ~~within and adjacent to~~ on future Death Valley National Park maps.

The process of review, information gathering, and negotiations over a four-year period resulted in the development of a proposal to meet the objectives described above. (Further information concerning the federal and tribal negotiation team meetings is provided in Chapter 5.0, "Consultation and Coordination.") The proposal identifies specific lands within the Timbisha Shoshone ancestral homeland to be transferred and acquired, and additional areas to which the Tribe will be provided access and the right to participate in cooperative activities in partnership with the respective federal agencies. This consolidated set of actions constitutes the Preferred Alternative, which is described in detail below.

2.2 ELEMENTS AND LOCATIONS OF THE PREFERRED ALTERNATIVE

2.2.1 National Park Service

The legislation proposes transfer of approximately 314 acres of land currently managed by NPS to the Secretary of the Interior to be held in trust for the Tribe. The land to be transferred and anticipated uses are described below. The actions are organized as follows: land transfers in trust, proposed authorization of private land acquisitions, and tribal cooperative activity/special use areas. These lands were identified in the *Secretarial Report* as meeting the criteria for suitability.

2.2.1.1 Land Transfer in Trust

Furnace Creek

The legislation calls for the transfer of approximately 314 acres of NPS land at Furnace Creek to the Secretary of the Interior to be held in trust for the Tribe. Located in central Death Valley National Park, the parcel includes a 25-acre nondevelopment zone and an Adobe Restoration Area containing several historic adobe homes, which would be managed by the Tribe as a tribal historic district. The transfer parcel is located directly south of the Furnace Creek Ranch development, east of the tribal village site and offices, and west of the junction of California State Routes 178 and 190. (Map 1.) The action proposes that all future development at Furnace Creek be subject to standards of size, design, and impact that would be jointly agreed upon by the National Park Service and the Tribe.

Residential development anticipated for this area is between 1 and 50 single-family homes. A tribal community center may be developed, which could include space for tribal offices, recreation facilities, a multi-purpose room and kitchen, senior and youth facilities, and other tribal needs. Other development needs may include a small-to-moderate sized, upscale desert inn with a Timbisha Shoshone theme, a cultural museum and gift shop, and tribally guided hikes, lectures, and tours. The inn would not duplicate existing overnight accommodations at Furnace Creek Ranch and would be sustainably designed to ensure compatibility with Park values and purposes. (*Secretarial Report*; Appendix S).

2.2.1.2 Proposed Authorization of Private Land Acquisition

Indian Rancheria

Historically, Indian Rancheria was composed of two, 80 acre parcels. The legislation calls for authorization to purchase from willing sellers the two ~~privately held~~ parcels and appurtenant water rights or water rights held separately, an area of approximately 120 acres, identified as Indian Rancheria to be taken into trust for the Tribe by the Secretary of the Interior. Forty acres of the 120 acre purchase would come from part of an 80 acre parcel which is held in private fee ownership. The remaining 80 acres consist of a parcel held in trust by the BIA as a public allotment. The heirs of the public allotment stem from Guadalupe Hunter, a Shoshone. Indian Rancheria is located in central Saline Valley, twenty miles northwest of Ubehebe Peak, south of Saline Valley Dunes, northwest of Salt Lake, and is ~~on~~ near the Death Valley National Park boundary. (Map 9). ~~Historically, the parcels have been owned and used by the Tribe for gardens and small-scale agriculture.~~

The level of use is envisioned to be residential at approximately the same level that has existed in the past which included family residences and limited agricultural uses. In addition, there may be a small joint NPS/Tribal office for visitor information and resource management for the Saline Valley portion of the Park.

2.2.1.3 Tribal Cooperative Activity/Special Use Areas

The National Park Service is authorized to ~~designate~~ identify the areas described in this subsection as nonexclusive special use areas for the Tribe, subject to federal law. Members of the Tribe are authorized to use these areas for low impact, ecologically sustainable, traditional practices pursuant to a jointly established cooperative agreement between the Tribe, and the National Park Service, and the Bureau of Land Management as appropriate.

Cooperative agreements are defined as agreements between the Tribe, the National Park Service, and the Bureau of Land Management that ensure proposed cooperative activities are not in derogation of the purpose and values for which Death Valley National Park was established and are consistent with applicable plans and policies governing lands managed by the Bureau of Land Management.

Cooperative activities are activities to take place within the Tribe's ancestral homeland that ensure the resources both inside and outside the Park are protected and enhanced.

Descriptions of the Tribal Cooperative Activity/Special Use Areas under NPS jurisdiction are found in the following sections: (1) Furnace Creek Tribal Cooperative Activity Areas, (2) Timbisha Shoshone Natural and Cultural Preservation Area, and (3) Other Special Use Areas.

2.2.1.3.1 Furnace Creek Tribal Cooperative Activity Areas

Tribal Mesquite Use Area

The Tribal Mesquite Use Area is located adjacent to Furnace Creek within Death Valley National Park, and is generally depicted on Map 6. The Tribe could use this area for processing mesquite using traditional plant management techniques such as thinning, pruning, harvesting, removing excess sand, and removing exotic species. NPS would limit and condition, but not prohibit entirely, public use of this area or parts of this area, in consultation with the Tribe.

Buffer Area

The Buffer Area is located adjacent to Furnace Creek and is approximately 1,500 acres in size, as generally depicted on Map 8. NPS would restrict visitor use of this area to protect the privacy of the Tribe and to provide an opportunity for the Tribe to conduct community affairs without undue disruption from the public.

2.2.1.3.2 Timbisha Shoshone Natural and Cultural Preservation Area

The area of the proposed Timbisha Shoshone Natural and Cultural Preservation Area would be managed in accordance with a jointly developed and established land management plan. It extends from near the southwest border of Death Valley National Park along the western axis of the Park, including portions of the Nelson and Panamint Mountain ranges, to the north end of the park. This area is generally depicted on Map 7. The area includes lands administered by NPS and BLM. Approximately 95 percent of this land is designated Wilderness. Actions proposed to occur within the Timbisha Shoshone Natural and Cultural Preservation Area include tribal traditional activities such as camping, ceremonies, and other traditional practices at specified locations subject to a jointly developed cooperative management plan prepared by the Tribe, National Park Service, and Bureau of Land Management.

The anticipated activities and uses listed below apply to specific areas within the Timbisha Shoshone Natural and Cultural Preservation Area that are of historical, cultural, and religious significance to the Tribe.

Hunter Mountain

Hunter Mountain is located in the Nelson Range in the west-central part of Death Valley National Park, south of Saline Valley and north of Talc City Hills. This mountainous area includes several peaks over 7,000 feet in elevation. The area is generally depicted on Map 7.

It is anticipated that tribal members could use traditional camps at Hunter Mountain in accordance with the jointly established management plan developed pursuant to a future cooperative agreement between NPS and the Tribe.

Wildrose

Wildrose Canyon is located in the Panamint Range in the west-central part of Death Valley National Park at an elevation of about 4,500 feet. The area is generally depicted on Map 7.

It is anticipated that tribal members could use traditional camps at Wildrose in accordance with the jointly established management plan developed pursuant to a future cooperative agreement between NPS and the Tribe. In addition, the Tribe could establish and maintain a tribal resource management field office, garage, and storage area, all within the area of the existing ranger station at Wildrose (existing as of the date of enactment of the Proposed Legislation.)

Saline Valley Warm Springs

Saline Valley Warm Springs are located in the Saline Valley in the northwestern part of Death Valley National Park. The area is generally depicted on Map 7. ~~The Tribe no longer uses the springs because current visitor use is incompatible with the Tribal values associated with the springs.~~

The area is suitable for special tribal uses because of the historic and cultural use of the area and the historical relationship of the Tribe to the area. The Tribe and NPS wish to establish a greater tribal presence at the springs and will develop and conduct a pilot demonstration project regarding management of the springs.

2.2.1.3.3 Other Special Use Areas

Special use areas entail cooperative activities that could be subject to cooperative agreements. In recognition of the significant contributions the Tribe has made to the history, ecology, and culture of the Park and to ensure that the visitor experience in the Park would be enhanced by the increased and continued presence of the Tribe, the Secretary would permit the Tribe's continued use of Park resources within special use areas for traditional tribal purposes, practices, and activities. Moreover, any use of Park resources by the Tribe would not be in derogation of purposes and values for which the Park was established.

Mesquite Springs and Daylight Pass

Mesquite Springs is located in the northeastern part of Death Valley National Park off of Nevada State Route 267. Daylight Pass is on a main route into the Park from the northeast on Nevada State Route 374.

The pass is over 4,000 feet above mean seal level in elevation, and provides views of Death Valley. These areas are generally depicted on Map 8.

For the purposes of this LEIS, uses have not been defined concerning Mesquite Springs and Daylight Pass. The *Secretarial Report* indicates that this location may be suitable for small-scale economic development such as an information booth. Any special uses that entail cooperative activities subject to a future cooperative agreement are subject to all applicable acts, codes, rules, and regulations.

2.2.2 Bureau of Land Management

2.2.2.1 Land Transfers In Trust

The legislation proposes transfer of approximately 7,240 acres of land currently managed by BLM to the Secretary of the Interior to be held in trust for the Tribe. The lands to be transferred and the anticipated uses are described below. The actions are organized according to the BLM jurisdiction of the individual parcels. These lands were identified in the *Secretarial Report* as meeting criteria for suitability, and land transfers were determined to be appropriate for the individual parcels.

Cooperative activities are proposed at Lida, Nevada. These are described under actions related to the BLM Tonopah Field Station, which has jurisdiction over the Lida Community parcel, Lida Ranch, and Lida Tribal Use Area.

Death Valley Junction

Death Valley Junction is located in Inyo County, California, at about 2,000 feet in elevation in open saltbush scrub habitat. The 1,000-acre parcel lies on the eastern edge of an alluvial fan sloping gently to the east. The parcel is bordered by the community of Death Valley Junction on the southeast side, is bisected by State Route 190, and is east of the junction of California State Routes 127 and 190. Death Valley Junction is under the jurisdiction of BLM's Barstow, California, Field Office. The parcel is depicted on Map 2.

It is anticipated that the land would be used for single-family residences and small-scale economic development.

Centennial

The legislation calls for the transfer of 640 acres of BLM land in the Centennial Flat area to the Secretary of the Interior to be held in trust for the Tribe. The parcel is located in Inyo County, California, west of Death Valley National Park, at 4,000 to 5,000 feet in elevation (Map 3). It is part of Centennial Flat, which is ringed on three sides by desert mountains. The parcel contains creosote bush and Joshua tree woodland. State Route 190 runs to the north and China Lake Naval Air Weapons Station lies to the south. The current location of the parcel differs from the location illustrated in the *Secretarial Report*. This is as a consequence of refinement of the location through field visits by BLM and the Tribe. The present location (Talc City Hills USGS quadrangle: Township 19 South, Range 39 East, portions of Sections 10 and 11) is approximately two miles northeast of the location depicted on Map 6 of the *Secretarial Report*. The Centennial parcel is an important location at the western edge of the Tribe's ancestral lands in view of Hunter Mountain, which is a traditional hunting and camping area. A sacred relationship exists between Hunter Mountain and the valley floors below. The area was historically used for both summer and winter camps, and is documented as a place where tribal members conducted communal rabbit and antelope hunts and gathered basketry materials. The Centennial parcel is under the jurisdiction of BLM's Ridgecrest, California, Field Office.

The Centennial parcel was located to avoid state land, mining claims, and a Bureau of Land Management Wilderness Area. This parcel is subject to a withdrawal by the Los Angeles Department of Water and Power (DWP). The parcel is located in part within a cattle-grazing allotment and within the Centennial Wild Horse Herd Management Area.

It is anticipated that the land would be used for single-family residences and small-scale economic development.

Scotty's Junction

The legislation calls for the transfer of 2,800 acres of BLM land at Scotty's Junction to the Secretary of the Interior to be held in trust for the Tribe. The parcel is located east of Death Valley National Park in Nye County, Nevada, south and west of the junction of U.S. Highway 95 and State Route 267. The land parcel is located at the upper end of Sarcobatus Flat (Map 4). This area is within the Tribe's homeland and several tribal families lived there. Scotty's Junction is under the jurisdiction of BLM's Tonopah, Nevada, Field Station.

It is anticipated that the land would be used for single-family residences and small-scale economic development.

Lida Community Parcel

The legislation calls for the transfer of 2,800 acres of BLM land at Lida Summit to the Secretary of the Interior to be held in trust for the Tribe. This parcel is located north of Death Valley National Park in Esmeralda County, Nevada, and lies on the eastern slope of the Palmetto Mountains (Map 5). The Lida Community parcel is adjacent to Lida Ranch and the historic town of Lida on Nevada State Route 266. This area has been used continuously by tribal members since at least the early 19th century, and continues to be used for hunting, and harvesting pine nuts. The site contains at least four springs known to tribal members who in the past had gardens and raised cattle in the area. Further, the parcel is within a grazing allotment. However, the grazing permit has been revoked and, thus, no grazing is currently authorized.

It is anticipated that the land would be used for single-family residences and small-scale economic development.

2.2.2.2 Proposed Authorization of Private Land Acquisition

Lida Ranch

The legislation calls for authorization to purchase Lida Ranch, which is located north of Death Valley National Park, in Esmeralda County, Nevada. Situated on the eastern slope of the Palmetto Mountains off State Route 266, the 2,340-acre ranch was originally developed by a Timbisha family who gardened and grew hay for their horses and cattle. The Proposed Action includes authorization to purchase from a willing seller the land and appurtenant water rights or water rights held separately, in conjunction with the parcel located at Lida Ranch (Map 9). Lida Ranch is within the jurisdiction of the Tonopah, Nevada, Field Station.

2.2.2.3 Tribal Cooperative Activity/Special Use Areas

Eagle Mountain

Eagle Mountain is a prominent limestone massif that rises several hundred feet from the desert, adjacent to the Amargosa River valley. Situated outside the southeast boundary of Death Valley National Park, and five miles southeast of Death Valley Junction, Eagle Mountain contains a variety of vegetative communities. It is bounded on the west by State Route 127 and is adjacent to the Amargosa River drainage. The Eagle Mountain area is within the jurisdiction of BLM's Barstow, California, Field Office and is generally depicted on Map 8.

It is anticipated that the Tribe would enter into a future cooperative agreement with BLM to participate in resource protection and restoration.

Warm Sulphur Springs

Warm Sulphur Springs is located outside the southwest boundary of Death Valley National Park near State Route 178. The springs are in the southern portion of the Panamint Valley at an elevation of approximately 2,000 feet. The site has been designated an Area of Critical Environmental Concern (ACEC) to protect the desert marsh habitat, which includes the marsh and the surrounding mesquite bosques.

The Warm Sulphur Springs area is within the jurisdiction of BLM's Ridgecrest, California, Field Office and is generally depicted on Map 8.

It is anticipated that the Tribe would enter into a future cooperative agreement with BLM to participate in resource protection and restoration.

Lida Tribal Use Area

This area is north of Death Valley National Park on State Route 266 and covers a large part of the Palmetto Mountains including the Lida Community parcel and Lida Ranch. It consists largely of mixed piñon and juniper stands. Surface water includes numerous springs and streams that vary from intermittent to perennial. Magruder Mountain, which anchors the southern portion of the area, is a well-used recreational area and also supports mining and ranching. The Lida Tribal Use Area is under the jurisdiction of BLM's Tonopah, Nevada, Field Station. The parcel is depicted on Map 8. There are no grazing permits associated with this land; no grazing is currently authorized.

It is anticipated that the Tribe and BLM would negotiate and enter into a cooperative agreement concerning this area, ensuring tribal access and use and to allow the Tribe to participate in pinyon nut gathering, and resource protection activities. Examples of resource protection activities may include vegetation management and restoration at spring sites, education programs to teach nontribal pinyon nut collectors how to harvest pine nuts without damaging pinyon pines, and development of a cooperative pinyon pine management plan with BLM.

2.2.3 United States Fish and Wildlife Service

2.2.3.1 Tribal Cooperative Activity Area

Ash Meadows National Wildlife Refuge, Nevada

Ash Meadows National Wildlife Refuge, established in 1987, is located outside the southeast boundary of Death Valley National Park in the Amargosa Desert slightly north of the California-Nevada border and eight miles northeast of the junction of State Routes 127 and 190. This desert oasis has a great diversity of species and is critically important to several endangered species, including the Ash Meadows pupfish. USFWS has jurisdiction over the Ash Meadows National Wildlife Refuge. The area is generally depicted on Map 8.

It is anticipated that the Tribe and USFWS may enter into a cooperative agreement to ensure Tribal access to and compatible use of the area and to allow the Tribe to participate in the protection of cultural resources in the area.

2.3 NO-ACTION ALTERNATIVE

Under the No-Action Alternative, the legislation would not have been passed by Congress and signed into law, land transfers and acquisitions would not be executed, and no lands within the Timbisha Shoshone ancestral homeland would be held in trust for the Tribe by the Secretary of the Interior. This alternative would not respond to Section 705(b) of the California Desert Protective Act and would not fulfill the Secretary's trust responsibility. This alternative would leave unaddressed the proposal for establishment of a land base for the Tribe, the designation of any special use areas with NPS, BLM, and USFWS, and would leave the contributions of the Tribe to the history, culture, and ecology of the region unacknowledged.

Under the No-Action Alternative, the Tribe would continue to be federally recognized, but would not receive any of the benefits associated with having a land base. The Tribe would continue to have limited access to lands within their ancestral homelands subject to existing regulations and policies in force for Death Valley National Park and Bureau of Land Management lands in California and Nevada.

2.4 ALTERNATIVES CONSIDERED BUT NOT BROUGHT FORWARD FOR ANALYSIS

The process leading to the legislative proposal for establishment of a tribal homeland and for cooperative activities has been a progressive, iterative process on a government-to-government level between the Tribe and contributing federal agencies leading to the development of a specific series of actions put forward in the legislative proposal. The process derived from ground rules established at the outset of the process (*Secretarial Report*, Appendix ~~B~~ S). The process was guided by a statement of shared interests of the Timbisha Shoshone Tribe and the United States Government (*Secretarial Report*, Appendix ~~B~~S). NPS and BLM management objectives were incorporated into the process of proposal, evaluation, and refinement of actions that have become part of the legislative proposal.

Because the process has been progressive, resulting in a proposal involving specific lands and activities within the Timbisha Shoshone ancestral homeland, other Action Alternatives were not brought forward for detailed analysis in this LEIS.

The location and amount of land considered for inclusion in the Proposed Action evolved during the course of negotiations. While not developed as an alternative, the following summary information reflects the process by which the Proposed Action was developed. The following lands or locations did not meet the criteria set forth in the *Secretarial Report* (Appendix S.)

Centennial Flat

Initially the Tribe identified three parcels in the Centennial area referred to as (1) lower Centennial (generally in the west), (2) the middle area, and (3) Centennial Springs (generally in the east). These parcels are separate and distinct from the 640 acre parcel identified as Centennial Flat and evaluated in this LEIS. Early in the discussion the middle area was dismissed from further consideration based on proximity to state school lands, location within a small section of the City of Los Angeles Department of Water and Power's (DWP) watershed withdrawal, and the existence of one water source.

The lower Centennial area was dismissed because it is located within a Wild Horse Management Area, a section of the area is within a Wilderness Area, ~~of~~ and endangered species are present at the site. In addition, it is located within DWP's watershed withdrawal and adjacent to a large state school area, and includes a spring appropriated for cattle use.

Encumbrances at Centennial Springs included DWP watershed withdrawal, rocky access, water appropriated for cattle, mining claims, and its location in a Wild Horse Management Area.

None of the original Centennial Flat areas had potable water or sufficient water to support a Tribal community. These areas were dismissed from further consideration.

Death Valley Junction/Greenwater Area

The Tribe initially identified 1,000 acres of BLM- lands at Death Valley Junction, California, consisting of lands north and south on State Route 190 (abutting State Route 127). The parcel was selected for its potential for development, including a tribally owned business, and the Tribe's interest in improving the area by traditional cultural and natural resource management. (U.S. Department of the Interior 1995). The existence of a state school section helped to redefine the area later incorporated within the Proposed Action.

Ash Meadows National Wildlife Refuge

The Tribe initially identified an area along Ruud Road (from Death Valley Junction to Pahrump) in the Ash Meadows National Wildlife Refuge. There were numerous encumbrances including its designation as an Area of Critical Environmental Concern (ACEC), the inclusion of a utility corridor, the presence of endangered plant species, and its location within a Wild Horse Management Area. In addition, Bureau of Reclamation research determined that there was insufficient water for any type of development.

Scotty's Junction

Initially, the Tribe envisioned the transfer of 5,760 acres of BLM- lands in Nevada. The area at Scotty's Junction was selected for its potential for tourist-related business, the Tribe's interest in restoring the area's big game population, and the opportunity to improve access to the Gold Mountain area. (U.S. Department of the Interior 1995). After further negotiations between the Tribe and BLM, 3,000 acres were identified as suitable lands for land transfer, of which approximately 200 acres was removed from consideration because of an existing grazing permit and to avoid any concerns with Nellis Air Force Base or private land holdings.

Lida Summit

The initial proposal for the Lida Summit area included 3,000 acres. Approximately 80 acres were removed from consideration due to existing mining claims.

Hunter Mountain and Wildrose

The Tribe initially requested an undetermined amount of land at both Hunter Mountain and Wildrose. However, the grazing permit at Hunter Mountain and frequent public visitation at Wildrose resulted in these areas being removed from consideration for land transfer.

Furnace Creek

Initially, 5,000 acres were identified at Furnace Creek, which it was selected by the Tribe for its particularly high development potential. Among the development options considered included tourist-related facilities, a medical clinic, a library, a museum, a conference and cultural center, a residential area, and related support facilities. (U.S. Department of the Interior 1995).

After further negotiations, 3,000 acres were identified by the Tribe, which is interested in developing approximately 314 acres and designating the remaining lands as preserve and buffer areas. As reflected in the proposed action, NPS worked with the Tribe to develop a preservation area and buffer zone with approximately 314 acres ultimately identified for trust status.

The Saline Valley, Hunter Mountain, Lower Saline,
Eureka Valley, Wildrose, and Panamint Range, and Valley Area

Originally the Tribe identified 750,000 acres from Death Valley National Park, BLM lands in California, and the Inyo National Forest. These areas were selected by the Tribe to preserve the unitary cultural significance of this area. (U.S. Department of the Interior 1995). As reflected in the Proposed Action, NPS and BLM worked with the Tribe to identify lands, such as Saline Valley, Hunter Mountain, and Wildrose, to be included in an established Timbisha Shoshone Natural and Cultural Preservation Area subject to a future cooperative agreements.

The Palmetto/Magruder Mountain Area

The Tribe initially requested 3,840 acres of BLM lands in Nevada for land transfer. The area was selected for its potential for tourism, and the Tribe's interest in protecting the environmentally sensitive area of the Silver Peak Range. (U.S. Department of the Interior 1995). As reflected in the Proposed Action, BLM worked with the Tribe to identify the Lida Community parcel for land transfer in trust, the Lida Ranch for proposed authorization of a private land acquisition from a willing seller, and the Lida Tribal Use Area, which could be subject to a future cooperative agreement between the Tribe and BLM.

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3.0 DESCRIPTION OF ENVIRONMENT AND AFFECTED RESOURCES

3.1 INTRODUCTION

This chapter provides a description of existing resources and environmental conditions that have the potential to be affected by the proposed action to establish a permanent tribal land base and related cooperative activities for the Timbisha Shoshone Tribe. The discussions in this chapter, and the description of the Proposed Action and Alternatives provided in Chapter 2.0, provide a basis for the evaluation of potential environmental impacts included in Chapter 4.0.

Discussion of existing resources and environmental conditions are provided in the following sections:

3.2 — Cultural Resources

3.3 — Water Resources

3.4 — Socioeconomics and Environmental Justice

3.5 — Land Use, Recreation, and Wilderness

3.6 — Vegetation

3.7 — Wildlife

Those resources and environmental concerns that would not be appreciably affected by alternative actions were eliminated from further consideration and comparative analysis. Additional topics considered but dismissed from further analysis include: geology, noise, transportation, visual resources, and air quality.

As appropriate, these sections provide discussion of regional and local conditions, to allow a comprehensive evaluation of the potential impacts related to the proposed land transfers in trust. Because the proposed cooperative activities/special uses do not involve permanent development, detailed evaluations of resources were not conducted as part of this LEIS. Further, cooperative agreements considered by the Tribe, National Park Service (NPS), Bureau of Land Management (BLM), and U.S. Fish and Wildlife Service (USFWS) would be subject to all applicable federal laws, executive orders, departmental guidelines, bureau policies and practices. Future development or program actions undertaken as a cooperative activity/special use would be subject to an appropriate level of environmental review.

The regional natural and cultural environmental ~~concerning~~ context of the lands subject to the Proposed Action is the Mojave Desert. Existing human activities influencing the environment include military bases (Nellis Air Force Base and Ranges, Nevada Test Site, China Lake Naval Weapons Station, Fort Irwin [Army], and Indian Springs Air Force Base); other human activities within the Regional Environment include grazing, mining, and tourism. Death Valley National Park is also within the regional environment.

3.2 CULTURAL RESOURCES

This section identifies the existing conditions of cultural resources on the lands proposed for transfer, acquisition and transfer, and cooperative activities/special uses among the Timbisha Shoshone Tribe, the National Park Service (NPS) and Bureau of Land Management (BLM). Information provided in this section was gathered from a review of background documents and through interviews with NPS and BLM archaeologists. In accordance with the Archaeological Resources Protection Act of 1979 (as amended) (ARPA, 16 USC 470aa-470ll), and public policy concerns protecting cultural resources such as spiritual and ceremonial lands from illegal excavation, areas identifying such resources have been ommitted from this LEIS.

Cultural resources are objects, sites, districts, buildings, structures, and other items possessing cultural, social, religious, economic, political, scientific, engineering, or architectural qualities. Prehistoric archaeological sites, historic architectural remains, artifacts, and resources associated with the activities or beliefs of different ethnic groups are classified as cultural resources. Often the term is used to identify resources that have not been evaluated for their significance against any evaluation criteria. The following section describes the known cultural resources on the land parcels under consideration for Timbisha Shoshone trust lands.

3.2.1 Current Tribal Status

The Death Valley Timbisha Western Shoshone Band became a federally recognized tribe on January 12, 1983 (Beal et al. 1984, 1). Recognition was based on the determination that the Timbisha satisfy the criteria laid out in 25 C.F.R. 83.7. At the time the Tribe applied for Bureau of Indian Affairs (BIA) recognition, it consisted of 199 members (Beal et al. 1984, 5). By 1995 their population had increased to 279 members, 54 of which lived at Furnace Creek (Armstrong et al. 1995, 8). Although federally recognized, no land was reserved and taken into trust as a reservation.

3.2.2 Site-Specific Cultural Resources

Existing and potential cultural resources are described in the sections below. Furnace Creek, Mesquite Springs, and Centennial are the only parcels that have a complete formal inventory of cultural resources. Lida Community parcel and Scotty's Junction have an inventory only along highway corridors. The other parcels have no formal inventory.

3.2.2.1 National Park Service

3.2.2.1.1 Land Transfer in Trust

Furnace Creek

The past, present, and future of the Timbisha Shoshone Tribe is centered in the Furnace Creek area, their ancestral homeland. The Timbisha take their name from the red ochre found in the region, which was used for burial ceremonies and healing purposes (Theodoratus et al. 1998, 46). Steward (1938, 92) identified a small winter village site here called *Tumbica*. The earliest resident of memory was Bat (*Pa:sanats*), who was possibly a Timbisha Shoshone chief (Steward 1938). Bat was likely the father of Bill Bullen (or Boland), an early Furnace Creek resident with many descendants still living in the area. In the early 20th century and perhaps earlier, Native Americans of Kawaiisu and Southern Paiute origin also inhabited Furnace Creek (Steward 1938, 91–92). With a fresh water source at their village site, these people used the Panamint Mountains to the west as their primary resource area. Although this village has changed location at least three times, Furnace Creek remains the center of Timbisha Shoshone life. The

tourism associated with Death Valley National Park attracted Native Americans of different groups for work opportunities.

Natural resources important to the Timbisha Shoshone include mesquite and desert bighorn sheep. The mesquite groves near Furnace Creek have great cultural significance, as their seeds were historically known far and wide for their sweet flavor (Steward 1938, 92). Tule Spring or *Toah Poize* (Bennett's Well) was a favored winter camp because of its water source and mesquite groves (Kirk 1969). Storage pits have been found west of Tule Spring, in the Hanaupah Fault Scarp. Desert bighorn sheep were hunted with bow and arrow, and were considered an important source of meat and raw materials. The Timbisha Shoshone demonstrated their regard for these animals by depicting them in petroglyphs and pictographs. The desert bighorn sheep transcended the subsistence sphere of life and entered the spiritual and ideational realm of the Timbisha Shoshone, having symbolic as well as subsistence value.

For centuries the Timbisha Shoshone spent winters at Furnace Creek, and the cultural resources expected within this parcel may extend across the entire gamut of social and subsistence activities. (Armstrong et al. 1995, 28; Fowler et al. 1995b, 61). Then Shoshone and other human groups often engage in a wide variety of subsistence, social, and spiritual activities within a single location; winter village sites often encompass the entire array of these activities. Because of the fresh water source at Furnace Creek, human groups have probably used the area for many thousands of years, perhaps even extending back to the Pinto period.

Historic era resources unrelated to the Timbisha homeland are also located in this area and may be significant. The Twenty Mule Team road is a potentially important historical resource in the lower Furnace Creek area. Most of the three-mile road is located on patented claims owned by U.S. Borax. The Monte Blanco borate mine, which appears to have experienced some late development in the early 1950s, and the assay office site in Twenty Mule Team Canyon have been determined to be eligible for inclusion on the National Register of Historic Places (NRHP). The area contains the original Death Valley colemanite discovery site and the oldest building in the Park, as well as several unique dugout, mound, and stone platform variations.

Additional cultural resources include structures built by the Civilian Conservation Corps (CCC) during the 1930s and 1940s. In the 1950s, Hunt recorded 12 adobe structures built by the CCC in 1936. Only seven of these buildings were still standing when Hunt recorded them—the other five were foundations or depressions. According to NPS, a final NRHP nomination form for Furnace Creek Wash Historic District has been filed. Given that American settlers have been present at the site for nearly 140 years, the area likely has considerable cultural resources reflecting both the mining and tourism industries.

California State Route 190 has historical significance in the Furnace Creek Wash area as the route early gold seekers followed into Death Valley while searching for a shortcut to the California gold fields. The 260-acre Boraxo mine was the first major open pit mine in the Park. Features of potentially historical significance in the upper Furnace Creek area include the Ryan Mines and a railroad grade (located outside the Park), which served the mines until the 1920s. A few trash deposits and a gypsum wall of unknown origin at the Park's east boundary have also been identified.

3.2.2.1.2 Proposed Authorization of Land Acquisition

Indian Rancheria

~~Steward (1938, 79) identified two winter villages in the Indian Rancheria area. The main village of *Icam'ba* (Coyote Water) at Waucoba Spring was on the eastern slope of Waucoba Mountain. The second village of *Pau'onzi* was at Lead Canyon Spring. Although most foods were procured locally, the Inyo Mountains also provided these villagers with pine nuts and deer. Rabbits, antelope, and seeds were available in the surrounding low hills, while dune grass seeds were gathered from both the Eureka and Saline valleys (Steward 1938, 79).~~

~~Because Shoshone groups may have spent many winters at *Icam'ba* and *Pau'onzi*, the cultural resources expected to be within this parcel are similar to those anticipated at Furnace Creek. Known cultural resources located nearby include hot springs and bighorn sheep hunting grounds (Fowler et al. 1995b, 29-30). Given the source of fresh water at Indian Rancheria, human groups may have used this area for thousands of years.~~

Two 80-acre parcels of land in the lower Saline Valley area that were allotted to two Shoshone families in the 1880s were collectively known as "Indian Rancheria." These lands hold cultural and historic significance to the Timbisha Shoshone Tribe. (Fowler et al. 1995 b, 29, 30). One parcel was owned by Tom and Guadalupe Hunter and the other by Caesar. Both parcels were occupied by family members for residential and limited agricultural uses. Indian Rancheria was a reservation area until 1958. Caesar's allotment was apparently sold in the 1950s to a non-Indian which took the land out of Trust status. In the available historical files dating from 1885, the Hunter parcel is held in Indian Trust by the BIA as a public allotment by the descendants of Tom and Guadalupe Hunter.

Files at the Land Office at Independence, California, dated May 18, 1892, and June 30, 1892, include many documents on the Tom Hunter allotment (#462) and on the Caesar allotment (#463), including the applications, supporting documents that include forms listing the date of settlement and improvements made on the property, and statements of testimony from witnesses regarding the applicants.

There are also letters regarding water rights on the two allotments. A March 14, 1903, letter from James Allen, Superintendent of the Indian School in Carson, Nevada, to the Commissioner of Indian Affairs describes the Western Borax Company's treatment of Caesar and Hunter as follows: "they have been unfair in the division of water so that it is no longer possible for [the landowners] to raise melons or vegetables…[this] condition has compelled many of them to leave…in order to sustain life… [E]ven Caesar and G. Hunter…will finally be compelled to leave or be starved out." (Margaret Peter, Big Pine, California, letter to Superintendent C.H. Asbury, Stewart, Nevada, regarding expiration of Borax Company water rights' lease, June 15, 1909. (Fowler 1995, Appendix D:IIC-b1-8)). The Indian landowners ultimately did abandon the property because of water problems in the 1920s.

Historically, the area surrounding the Hunter and Ceasar parcels are considered an important resource to the Timbisha Shoshone (Fowler et al. 1995b). Although pre-contact behavior patterns are often the focus of attention, the importance of historic Shoshone lifeways also deserves recognition. There were five families or camps, including those headed by Caesar, Caesar's father, Joaquin, Tom Hunter, and Patu'ku. The people utilized the entire region for subsistence activities, including hunting deer and small game animals in the Inyo Range; gathering mesquite and other wild seeds near the village and in the surrounding mountains; and using and trading salt from the salt flats in Saline Valley. The people planted gardens at this village site, utilizing and selling the produce. This site was also an important gathering site for Timbisha people from all the villages in the region for rabbit drives, fall festivals and other ceremonies (Fowler, et al. 1995b).

3.2.2.1.3 Tribal Cooperative Activity/Special Use Areas

Furnace Creek—Tribal Mesquite Use Area and Buffer Area

The range of cultural resources at Furnace Creek can also be expected to occur at these areas (see Section 3.2.2.1.1, "Land Transfer in Trust, Furnace Creek"). The restoration area has potentially significant historic structures built by the CCC in the 1930s.

Timbisha Shoshone Natural and Cultural Preservation Area

Hunter Mountain

The expected cultural resource types at Indian Rancheria can also be anticipated at Hunter Mountain. At an elevation of 7,400 feet above mean sea level, Hunter Mountain probably has cultural resources that reflect the importance of springs and desert bighorn sheep to the Timbisha Shoshone (Armstrong et al. 1995, 30). Known mining activity that occurred in 1904 may have also produced significant historic resources (Lingenfelter 1986, 284).

Wildrose

Wildrose Spring (*Su'unavadu* or "Willow Flat") has an elevation of 4,500 feet and is about eight miles north of Warm Sulphur Springs. The Timbisha Shoshone have historically moved from their winter camp at Furnace Creek to Wildrose Spring in the summer and fall. A summer camp for seed gathering was often established at Wildrose Springs (Steward 1938, 93). The few winter residents—known as *Su'unavadunzi*—may have included George Hansen (sometimes referred to as Indian George) who lived there as a young married man in 1872 (Fowler et al. 1995b, 53). This site is closely associated with Mr. Hansen, who was a cousin of Shoshone Johnny. In 1861 Mr. Hansen led a prospector named Dr. Samuel George up nearby Surprise Canyon. Because Dr. George suspected that his guide was misleading him, he turned back just short of the great gold strikes found years later (Lingenfelter 1986, 125).

As with the other proposed land acquisitions, the Wildrose Spring location could contain both prehistoric and historic era resources. The summer-fall village at the site could reflect the entire range of social and subsistence activities. Known cultural resources include hunting grounds, pine groves, and campsites (Armstrong et al. 1995, 32). Winter villages were often the center of social and spiritual events. The springs provided a source of fresh water that humans may have used for thousands of years.

Descendants of George Hansen and other 19th and 20th century Timbisha Shoshone still live in the area. The importance of Wildrose Spring to the Timbisha Shoshone probably extends back many centuries. In addition to ranching activity, other historic resources may include the remnants of mining activity.

Saline Valley Warm Springs

~~For a description of cultural resources for Saline Valley Springs, see Section 3.2.2.1.2, "Proposed Authorization of Land Acquisition, Indian Rancheria."~~

Saline Valley Warm Springs are located in the Saline Valley in the northwestern part of Death Valley National Park. The Saline Valley Warm Springs were highly valued, and widely utilized by the older generation of contemporary tribal members, for healing and medicinal purposes. (Fowler et al. 1995 b, 29, 30). The Timbisha Shoshone who used them within living memory were the members of the Hunter family from lower Saline Valley. (*Id.*) Sarah Hunter actually planted the palm trees at Palm Spring,

bringing them from Death Valley. (*Id.*) She also herded horses in that area, considering it part of the Hunter Ranch range. Even though these hot springs continue to have spiritual significance to the Timbisha people, they are not currently used for organized tribal activities or ceremonies. (*Id.*)

Other Special Use Areas

Mesquite Springs

Located five miles east of the spiritually important Ubehebe Crater (called *Duh-veétah Wah;sah* or Duhveetha's Carrying Basket), Mesquite Springs supported the Timbisha Shoshone village of *Panuga.* At an elevation of 1,730 feet, this village probably had few residents during the summer. The Timbisha Shoshone attach considerable importance to the springs, desert marsh, and mesquite groves of this area.

During the winter at Mesquite Springs, Timbisha Shoshone from Saline Valley and Cold Mountain Jack's family hunted waterfowl and gathered plants and seeds. A Native American family named Dock and Cold Mountain Jack each had ranches and horticultural fields at Mesquite Springs (Steward 1938, 88). The latter group moved back and forth between *Panuga* and *Mahunu* (Grapevine Canyon). At both locations subsistence activities focused on seeds, roots, and small game, because deer and desert bighorn sheep were less available. These Timbisha Shoshone families only assembled for communal rabbit drives and fall festivals—the rest of the time they moved independently. Fall festivals started after the collection of pine nuts, and were combined with the annual mourning ceremony.

The expected cultural resources at Mesquite Spring may include both prehistoric and historic archaeological sites. The winter village at *Panuga* could reflect the entire range of social and subsistence activities. Known cultural resources located nearby also include gardens and ponds for duck hunting (Fowler et al. 1995b, 31). As in other locations with fresh water, human groups have probably lived here for thousands of years.

Antanaitis and others (1995, 32) surveyed this area and recorded 84 sites, of which 2 had already been recorded and 2 were historic. They also found 312 isolated artifacts. Stone tool production was the sole activity at 28 of these sites. They also found 6 sites that consisted of 1 or more cleared "sleeping" circles, with an average diameter of 1 to 2 meters. Segments of 8 prehistoric trails were also located and recorded. Antanaitis and others (1995, 38–39) recorded 2 sites with petroglyphs and 14 sites with rock features and alignments.

Historic resources could include materials from the agricultural activities of the Timbisha Shoshone. Cold Mountain Jack lived here during the 19th and early 20th centuries, and has descendants still living in the area. The importance of Mesquite Springs to the Timbisha Shoshone covers a period of at least 200 years. In addition to agricultural activity, other historic resources may include the remnants of activities associated with the construction of Scotty's Castle in the 1920s and 1930s (Armstrong et al. 1995, 27). Both American settlers and Native Americans were involved in this project, and nearby archaeological sites may reflect related activities. Antanaitis and others (1995, 39–40) recorded two segments of historic roadways and two historic components from dating from before 1945, containing glass and ceramic fragments as well as metal cans and a car frame.

Daylight Pass

At 4,300 feet in elevation, Daylight Pass is high above Death Valley. The Timbisha Shoshone had a camp at Hole-in-Rock Spring for overnight stays as they traveled between Beatty, Nevada, and Death Valley. Steward (1938, 45) identified this location along a trade route used by Beatty-area Shoshone to exchange rabbit-fur blankets for buckskins and bead "money" with the Owens Valley Paiute.

3.2.2.2 Bureau of Land Management

3.2.2.2.1 Land Transfers in Trust

Death Valley Junction

Several families consisting of about 25 individuals of mixed Timbisha Shoshone and Southern Paiute ancestry lived here during the early 1920s (Fowler et al. 1995b, 65). The proximity of this parcel to the Amargosa River may favor winter and spring subsistence and settlement activities.

Historic Native American resources may include those properties and structures associated with the Holmes family of Death Valley Junction, who have descendants on the Timbisha rolls (Fowler et al. 1995b, 65). Another Native American family living here was the Weed family, who are members of the Southern Paiute from the Pahrump-Las Vegas area. This parcel reflects 20th-century occupation by the Timbisha Shoshone. As indicated by Fowler and others (1995b, 66), the proposed transfer of Death Valley Junction in trust to the Timbisha Shoshone reflects commercial rather than cultural interests.

Additional known historic resources include two recorded sites. The Tidewater and Tonopah Railroad runs along California State Route 127, and extends into the parcel (Reed 2000). This site has remnants of track beds and ballast, as well as trash deposits from track construction and maintenance. The second site is the location of a purported 1900s school and residence, although no standing structures remain (Reed 2000).

Centennial

This parcel is located within the Little Lake Shoshone homeland (*Kuhwiji* District), close to Northern Paiute, Kawaiisu, and Tubatulabal lands. Black Rock Springs, south of the parcel, has an elevation of 6,200 feet above mean sea level. Although Steward (1938, 81) describes Black Rock Springs as a summer village where the Shoshone gathered seeds, they also communally hunted rabbits in the fall and trapped rabbits in the winter (see also Fowler et al. 1995b, 47). As there were only three winter villages within a 1,000-square-mile area, cohesiveness among villages was not as strong as in other Shoshone districts.

Steward's description of the seasonal activities within the Kuhwiji District is based on the inhabitants of the Coso Hot Springs village (1938, 81). During the winter, the Shoshone hunted rabbits, ate cached seeds, and lived in pit houses. In April they traveled about 12 miles to Haiwee Springs where they finished their stored seeds and gathered greens. After about a month or two, they moved to Cold (or Coles) Spring, where a few Shoshone often wintered. In midsummer they would gather mesquite in Saline and Death valleys, where they would process the seeds into flour. They often cached surplus flour for future use.

Throughout this time, they individually hunted rabbits with spring-pole traps. Perhaps during the fall they would hunt the rabbits communally, or travel to Owens Lake for ducks. The Furnace Creek Shoshone did not participate in these communal rabbit hunts, as they had their own drives in the Panamint Mountains (Steward 1938, 82). When resources in the area became scarce, the Little Lake Shoshone would join the Furnace Creek Shoshone in the Panamint Mountains.

Shoshone tribe members may have spent the winter at Centennial Flat, so the cultural resources expected within this parcel extend across the entire range of social and subsistence activities. (Fowler et al. 1995b, 51).

According to Judyth Reed of BLM's Ridgecrest Field Office, the entire parcel is situated on an alluvial fan approximately ~~10~~ 2 miles south of State Route 190. (Judyth Reed, BLM, telephone conversation with Roman Beck, Past Forward, February 2000). Concurrent with this determination, BLM has contracted a cultural resources management firm to investigate archaeological and cultural resources on this parcel, and their research has identified no cultural resources. (*Id.*)

Scotty's Junction

This area is within the Timbisha Shoshone Tribe's homeland and several families lived there. The parcel is within the location of *Yogwena*, the Shoshone name for Sarcobatus Flat (Fowler et al. 1995b, 15). Tribal members hunted deer and desert bighorn sheep until the 1940s and the area contains important lambing areas. Although Steward recorded no ethnographic village sites in this area, Sarcobatus Flat may have archaeological sites related to hunting, such as lithic scatters and animal processing locations.

Several resource inventories have been completed along the U.S. Highway 95 corridor (Mike Baskerville, BLM, telephone conversation with Roman Beck, Past Forward, February 2000). Although no cultural resources have been recorded within this area, a landing strip possibly associated with World War II activities exists nearby. Even though no specific historical resources have yet been identified at Scotty's Junction, the proximity of the parcel to the mining areas at Gold Mountain to the west as well as the old railroad grade to the south indicate the possibility the parcel may contain early American settler sites. A windmill just east of U.S. Highway 95 may also reflect historical activity on the parcel.

Lida Community Parcel

This area has been continuously used by the Timbisha Shoshone since at least the early 19th century, and continues to be used for hunting, and harvesting pinyon pine nuts. At least five traditional villages were located in this area. There are at least four springs known to tribal members, who in the past had gardens and raised cattle in the area (Fowler et al. 1995b).

Timbisha Shoshone families lived here throughout the year, so all types of cultural resources are expected within this parcel. Known cultural resources located nearby include dance grounds, and pinyon pine nut and animal processing locations. Because of its close proximity to Lida Ranch, and the coarse detail of historical maps, some confusion may exist over the precise locations of cultural resources at the Lida Community parcel. Some resources thought to be at Lida Ranch may actually be at the Lida Community parcel, and vice versa.

3.2.2.2.2 Proposed Authorization of Private Land Acquisition

Lida Ranch

This privately owned land has not been inventoried for cultural resources. Steward's investigation of the area (1938, 69) found the village known as *Pauwaha* (Lida) that consisted of five families. Most were Shoshone, but some village members spoke Northern Paiute. He found that the Lida Shoshone collected most of their resources locally. An ample supply of pinyon pine nuts kept the Shoshone at Lida and a village known as *Tunava* (Pigeon Springs) during communal gathering time. The Timbisha Shoshone also collected seeds and roots by limiting brush undergrowth through controlled burning. The Lida Shoshone participated in festivals at Pigeon Springs with other groups, including those from Fish Lake Valley, Gold Mountain, Stonewall Mountain, Palmetto, and Pigeon Springs (Steward 1938, 70).

There was ample water in springs nearby where other Timbisha Shoshone families lived. The springs were important sites for tribal gatherings related to ceremonial activities before and after the pinyon pine

nut harvest. Throughout the Great Basin, cultural and archaeological resources are often near sources of fresh water. Stands of pinyon pine trees are also common locations for cultural resources.

Timbisha Shoshone families lived here throughout the year, so all types of cultural resources are expected within this parcel. Known cultural resources located nearby include dance grounds, and pinyon pine nut and animal processing locations. A member of the Timbisha Shoshone Tribe, Maggie Shaw built Lida Ranch in the 1930s (Fowler et al. 1995b), where she gardened and grew alfalfa for her horses and cattle. Lida Ranch is an important historical Native American property for the same reasons ascribed to Hunter Ranch. The Timbisha Shoshone have inhabited this parcel in both prehistoric and historic times.

Several resource inventories have been completed along the Nevada State Route 266 corridor (Mike Baskerville, BLM, telephone conversation with Roman Beck, Past Forward, February 2000). Two sites have been recorded containing obsidian and chert flakes, Cottonwood, Humboldt, and Rosegate projectile points, biface fragments, and a chert knife.

3.2.2.2.3 Tribal Cooperative Activity Area/Special Use Areas

Eagle Mountain

As Steward (1938) did not visit the area, and Fowler and others (1995b) did not identify any cultural resources in the vicinity of Eagle Mountain, the importance of this area to the Timbisha Shoshone is relatively unclear, despite the fact that this mountain is situated near the edge of the tribal range bordering Southern Paiute territory.

The expected cultural resources on Eagle Mountain could include both prehistoric and historic archaeological sites. Shoshone and Southern Paiute hunters from the Gypsum period could have built hunting-related features for targeting deer and desert bighorn sheep. They could have also had spring and fall villages on the gentler slopes at the mountain's base. Historical resources may include refuse from mining activities. In 1866, a miner by the name of Gillis is recorded as having traveled from Ash Meadows to Eagle Mountain in search of fresh water (Lingenfelter 1986, 90).

Warm Sulphur Springs

The Timbisha Shoshone attach considerable importance to the springs, desert marsh and mesquite groves of this area. Warm Sulphur Springs is an important place that the Timbisha Shoshone wish to restore and preserve. This site is also closely associated with George Hansen.

According to Steward (1938, 84), the main—and perhaps only—winter village in ~~northern~~ southern Panamint Valley was at Warm Sulphur Springs (*Ha:uta*). By historic times, the population here numbered about 100 individuals. Although most villagers were Shoshone, some Kawaiisu also lived here. Subsistence activities focused on collecting and processing mesquite seeds. The proximity of this village to the Panamint, Argus, and Coso Mountains gave the Warm Sulphur Springs Shoshone access to diverse resources. Steward (1938, 85) believed that few communal activities occurred here, because the Death and Saline valleys were nearby.

The expected cultural resources at Warm Sulphur Springs could also include both prehistoric and historic archaeological sites. The winter village at Warm Sulphur Springs could reflect the entire range of social and subsistence activities (Fowler et al. 1995b, 57).

Historical resources could include materials from the ranching and agricultural activities of Timbisha Shoshone members. Corrals, barns, and other ranching structures may have considerable historical value

here. George Hansen and other Timbisha Shoshone who lived here during the 19th and early 20th centuries have descendants still living in the area. The importance of Warm Sulphur Springs to the Timbisha Shoshone covers a period of 200 years and perhaps much longer. In addition to ranching activity, other historical resources may include the remnants of mining activity.

Lida Tribal Use Area

The expected cultural resources at Lida Ranch and Lida Community parcel can also be anticipated within the Lida Tribal Use Area. (See Sections 3.2.2.2.1, "Land Transfers in Trust, Lida Community parcel" and 3.2.2.2.2, "Proposed Authorization of Private Land Acquisition, Lida Ranch.")

3.2.2.3 U.S. Fish and Wildlife Service

3.2.2.3.1 Tribal Cooperative Activity Area

Ash Meadows National Wildlife Refuge

Based on ethnographic data collected by Steward (1938, 92, 182), Ash Meadows has a greater association with the Southern Paiute than with the Timbisha Shoshone. Inhabitants of Ash Meadows traveled east and southeast to Mount Shader and the Spring Mountains for subsistence activities, leaving a relatively under-used area between Ash Meadows and Death Valley during ethnographic times (Steward 1938, 92).

At Ash Meadows, prehistoric cultural resources could include Southern Paiute and Timbisha Shoshone villages near the springs (Fowler et al. 1995b, 23).

3.3 WATER RESOURCES

This section is based on a site visit, U.S. Geological Survey topographic maps of the lands proposed for transfer, acquisition and transfer, and cooperative activities/special uses; discussions with NPS and BLM hydrologists, and water resource information and surveys pertinent to the proposed establishment of the Timbisha Shoshone Natural and Cultural Preservation Area. The information presented is derived primarily from *Groundwater Resource Issues of Death Valley National Park Related to the Timbisha Shoshone Proposed Reservation* (Werrell 1998) and additional sources as cited in the text.

3.3.1 Regional Setting

3.3.1.1 Water Resources

Parcels and areas proposed for transfer, acquisition and transfer, and cooperative activities/special uses overlie one of three separate groundwater flow systems. Furnace Creek, Death Valley Junction, Scotty's Junction, Lida Ranch, and Lida Community parcel occur within the Death Valley groundwater flow system. Indian Rancheria occurs within the Saline Valley groundwater flow system. Centennial Flat overlies the Owens Lake groundwater flow system. Lida Valley is considered part of the Death Valley Ground Water Flow System. (See outflow estimations to Sarcobatus Flats and Death Valley on page 95.)

The three groundwater flow systems are generally similar in their morphology, climate, and aquifer characteristics. Of the three systems, the Death Valley groundwater flow system is the most extensively studied and documented and is representative of general characteristics of the other three groundwater flow systems. Because hydrogeologic information is most readily available for the Death Valley flow system, the majority of the regional setting discussion for the three groundwater flow systems focuses on the Death Valley flow system.

Death Valley Groundwater Flow System

The Death Valley groundwater flow system, named for the playa and spring system in Death Valley National Park, is the ultimate discharge area for a regional groundwater flow system that encompasses southern Nevada and southeastern California. The groundwater at Death Valley National Park originates as precipitation that falls in the mountain areas surrounding the Park. Surface water resources are extremely intermittent and groundwater is the primary water source in the region.

The Death Valley groundwater flow system underlies about 15,800 square miles and includes approximately 30 hydrographic basins. Each basin typically contains a structural depression that is partly filled by material eroded from adjacent mountain ranges. The basins are separated by intervening mountain ranges that occupy about 25 percent of the area. The rocks that underlie the basins and mountains may be highly fractured, thus permitting regional groundwater migration under local topographic divides from high altitude areas in the northern part of the system toward low areas in Death Valley.

Average annual rainfall in Death Valley is about 1.9 inches and in the other valleys is about 4 to 5 inches. Above 7,000 feet annual precipitation may average between 12 to 25 inches.

Surface drainage is generally from the mountains to adjacent basins. Some basins are topographically closed. Water accumulates in playas following infrequent periods of high precipitation and runoff. Other basins are drained by rivers and streams that flow toward Death Valley when water is available. The Amargosa River is the most prominent of these intermittent drainages. During very wet years it flows all the way to the Death Valley playa or saltpan where a shallow intermittent lake is formed.

The main aquifers present in the flow system include basin-fill aquifers, carbonate-rock aquifers, and volcanic-rock aquifers. In some localized areas groundwater is also transmitted through highly fractured zones of older noncarbonate sedimentary rock. Other rocks and deposits impede groundwater flow. These include fine-grained deposits in the basin fill, some types of volcanic rock, noncarbonate sedimentary rocks that are not highly fractured, and crystalline rocks (Figure 1). In the eastern part of the system carbonate-rock aquifers are most extensive and in the northwest part of the system volcanic-rock aquifers are most extensive. Groundwater flow in the eastern and northwestern parts of the system is predominantly through carbonate-rock and volcanic-rock aquifers respectively. Some flow moves through basin-fill aquifers in all parts of the system.

Groundwater moves from recharge areas in the high-altitude parts of the system to valleys in the southern part of the system and ultimately to Death Valley, which is the lowest part of the system. The water flows downgradient along the path of least resistance, generally moving through the aquifers and around the deposits that impede flow. Groundwater is naturally discharged at intermediate discharge areas in the flow system in addition to the ultimate discharge area at Death Valley. Such intermediate discharge areas include Sarcobatus Flat where groundwater is near the surface and withdrawn by phreatophytes (plants whose roots reach the water table), and Oasis Valley, Alkali Flat near Death Valley Junction, and Ash Meadows where discharge is by phreatophytes and at springs that discharge from the regional aquifer system (Bedinger 1997). The remainder flows to Death Valley to be discharged from springs, wet areas at the margin of the saltpan, or evaporation from the saltpan.

There is a finite and limited yield for the Death Valley groundwater flow system. The system yield is not an independent amount for each basin. Water withdrawn from an interconnected basin can not be supplied solely from diminishment of local spring flow and local evapo-transpiration. The basins are interconnected and effects of withdrawals extend beyond basin boundaries. Each incremental increase in pumping from upgradient basins would cause an incremental decrease in flow to the Death Valley flow system's intermediate and ultimate discharge areas. NPS could enter into a cooperative agreement with the Tribe that its federal reserve and state water rights would be managed with the goal of having no effect on Death Valley National Park water resources.

Saline Valley Groundwater Flow System

The Saline Valley groundwater flow system is a 210-square-mile alluvial basin with an internal drainage system. The basin is surrounded by the Inyo Mountains to the west, the Saline Range to the north, the Dry Mountains to the east, and the Nelson Range to the south. Similar to the Death Valley flow system, recharge occurs in the form of precipitation that falls on the mountain ranges that ring the basin. The groundwater moves from recharge areas in the high-altitude parts of the system to the valleys below. The water flows downgradient along the path of least resistance, generally moving through the aquifers and around the deposits that impede flow. The groundwater is naturally discharged at intermediate discharge areas in the flow system in the form of springs in addition to the ultimate discharge at the Saline Valley salt flat (State of California Department of Water Resources 1975).

The main aquifers present in the flow system include basin-fill aquifers, carbonate-rock aquifers, and volcanic-rock aquifers. In some localized areas groundwater is also transmitted through highly fractured zones of older non-carbonate sedimentary rock. Other rocks and deposits impede groundwater flow. These include fine-grained deposits in the basin-fill, some types of volcanic rock, noncarbonate sedimentary rocks that are not highly fractured, and crystalline rocks.

Owens Lake Groundwater Flow System

The Centennial site is within the Owens Lake groundwater flow system, a 360-square mile alluvial site with an internal drainage system. The basin is surrounded by the Argus Mountains to the east, the Inyo Mountains to the north, and the Coso Mountains to the south and west. The climate in the valley is dry, with an average annual rainfall of less than 4 inches near the valley floor. Similar to the Death Valley flow system, recharge occurs in the form of precipitation that falls on the mountain ranges that ring the basin. The groundwater moves from recharge areas in the high-altitude parts of the system to the valleys below. The water flows downgradient along the path of least resistance, generally moving through the aquifers and around the deposits that impede flow. Groundwater is naturally discharged at intermediate discharge areas in the flow system in the form of springs in addition to the ultimate discharge at the Owens Valley playas (State of California Department of Water Resources 1975).

The main aquifers present in the flow system include basin-fill aquifers, carbonate-rock aquifers, and volcanic-rock aquifers. In some localized areas groundwater is also transmitted through highly fractured zones of older non-carbonate sedimentary rock. Other rocks and deposits impede groundwater flow. These include fine-grained deposits in the basin-fill, some types of volcanic rock, noncarbonate sedimentary rocks that are not highly fractured, and crystalline rocks.

3.3.1.2 Water Rights

Initial research of records maintained by California's State Water Resources Control Board for water rights in the Death Valley area revealed that there are approximately 45 state appropriative water rights established for 41 water sources (springs, seeps, streams, and wells). In the region of the proposed Timbisha Shoshone sites, valid existing water rights occur under federal law and California and Nevada state laws Water rights of the United States, in particular, for Death Valley National Park, are located largely in California and downgradient of areas where water is being withdrawn, or proposed for withdrawal, in the Death Valley groundwater flow system.

Federal Reserved Water Rights

The federal government may reserve land for a particular purpose, and also reserve by implication, enough unappropriated water at the time of the reservation as is necessary to accomplish the purposes for which Congress and the President authorized the land to be reserved without regard to the limitations of state law.

When Congress established Death Valley National Monument in 1933 and enlarged the area to create Death Valley National Park with the passage of the California Desert Protection Act in 1994, it reserved water to meet Park purposes. With respect to water rights for wilderness areas under Section 706 of the 1994 Act, Congress expressly reserved "…with respect to each wilderness area designated by this Act…a quantity of water sufficient to fulfill the purposes of this Act. The priority date of such reserved rights water shall be the date of enactment of this Act." With the exception of reserved rights to Devil's Hole, the precise nature and extent of Federal reserved rights in the areas selected for establishment of the Timbisha Shoshone homeland would likely remain uncertain until the United States is joined in an adjudication, the Department of Justice files claims to water rights on behalf of the United States, and the court decrees the United States rights.

Unique physical constraints are controlling factors in the establishment of water rights for the proposed land parcels. These constraints arise from the physical features associated with the Death Valley area; that is, Death Valley is recognized as the hottest driest area of North America. Water resources of this area are ~~finite~~ very limited and are being vigorously pursued for development by multiple competing interests.

NPS believes the regional groundwater aquifer already may be stressed. The establishment of water rights for the lands subject to the Proposed Action must take into consideration these physical limitations.

Furthermore, by virtue of numerous statutes, including the Organic Act of 1916 and the California Desert Protection Act of 1994, as well as the U.S. Supreme Court decision in *Cappaert v. United States*, 42 U.S. 128 (1976), NPS has a statutory duty as well as the legal ability to protect the water rights and water-related resources of Death Valley National Park. This mandate obligates NPS to obtain protection for these rights and resources by whatever means are deemed prudent and effective, including limitations on groundwater development in areas hydrologically connected to the Park's water resources.

A report concerning Death Valley National Park, titled *Furnace Creek Area—Water Rights and Related Matters* (89th Congress, 1st Session, House Report No. 193), by the Committee on Government Operations describes water availability and rights in the Furnace Creek area. According to the report, the Committee's investigations eventually resulted in the Interior Department's Solicitor preparing a legal opinion (June 23, 1964), concluding "…for the purposes of negotiation you may authorize the Park Service to recognize appropriative rights [of the Death Valley Hotel Company, Ltd.] in waters of Furnace Creek, Travertine Springs, and Texas Springs in the aggregate of 1.914 cubic feet per second and to riparian rights not to exceed 0.15 cubic feet per second," and that "…any balance of the water supply available in the area under consideration must be deemed to be reserved to the United States.…The federally reserved waters are now dedicated to monument-oriented purposes."

NPS and Fred Harvey, Inc. (successor to the Death Valley Hotel Company, Ltd.) entered an "Agreement Respecting Land and Water Rights" and an "Agreement Conveying and Determining Water Rights (Short Form)" in 1969. The United States agreed that Fred Harvey, Inc., has appropriative water rights totaling ~~2,064~~ 2.064 cubic feet per second in the Furnace Creek area of the Park that are "…prior and superior to any rights of the United States in and to the waters from such sources," and a riparian right of 0.15 cubic feet per second that "…shall not be diminished by any exercise by the United States of any claimed riparian or other right." These are collectively referred to in the agreement as Fred Harvey Inc.'s "entitlement." AmFac, Inc. is the successor to Fred Harvey, Inc. (Werrell, (Ed.) 1988.)

California Water Rights

California water rights are governed by the Prior Appropriation Doctrine and the Riparian Doctrine. Appropriative water rights in California are based on the principle that the party who first appropriates the water (applies it to a beneficial use) has a prior right to use, as against all later appropriators. The doctrine is commonly called "first in time, first in right." Beneficial use, as defined by the State of California, includes municipal, irrigation, recreation, preservation and enhancement of fish and wildlife resources, and other uses (California State Water Resources Control Board 1987, Sec. 659). An appropriative water right is a property right; under state law it can be purchased, sold, and its place of use, purpose, and point of diversion may be changed without loss of priority provided there is no injury to the water rights of other and environmental impacts are adequately mitigated.

Before appropriating water, a party must file an application with the California State Water Resources Control Board (SWRCB). If the SWRCB determines there is unappropriated water available, the permit will generally be approved (SWRCB 1995, Sec. 1250–1631).

Under California law, groundwater is a water right. The SWRCB has no jurisdiction over percolating groundwater except in four southern counties (including San Bernadino County) where the filing of notices is required. However, the proposed Timbisha Shoshone sites are located in Inyo County and not subject to these notices. The use of groundwater is shared between users in a given groundwater basin and, in times of shortage, is equitably apportioned (SWRCB 1990, pp. 9–10). Percolating groundwater

may also be appropriated. Subject to future requirements on overlying lands, surplus water that may be withdrawn without creating an overfinal on the groundwater supply could be appropriated for use on nonoverlying lands. Such an appropriation is accomplished simply by use—no permit is required. (SWRCB 1990, p. 10).

There are no known withdrawals from wells within the Death Valley National Park that would be affected by water development and use associated with the lands proposed for transfer. NPS is currently examining the possibility of a well in the Furnace Creek area to provide a secure potable water source and to replace the historic use of spring discharge waters.

Nevada Water Rights

Nevada follows the Prior Appropriation Doctrine in allocating both surface and groundwater. Allocation is generally through an administrative process under the authority of the Nevada State Engineer. Obtaining approval of a permit requires filing an application with the State Engineer and advertisement in a paper of general circulation, giving all parties notice and the opportunity to protest. With permit approval, the applicant may commence water development. The right to use water may be lost if the water is not put to beneficial use within a specific time period. (Nevada Division of Water Resources 1987).

Site-Specific Water Right Issues

Furnace Creek

Historically, water rights in the Furnace Creek area of Death Valley were established by U.S. Borax Mining and Chemical Company and subsequently conveyed to its successors in interest leading to the current owner, the AmFac Inc. The previously discussed "Agreement Respecting Land and Water Rights" and an "Agreement Conveying and Determining Water Rights (Short Form)" divided those rights between the owner and NPS. Under the terms of that agreement, NPS constructed and operates a domestic water collection and distribution system on behalf of the signature parties. NPS has provided domestic water for the Timbisha Shoshone village at Furnace Creek from its entitlement under that agreement.

Death Valley and Scotty's Junctions

A small number of water rights are held by landowners in the vicinity of Scotty's Junction.

3.3.2 Site-Specific Water Supply

The following section details water supply conditions at lands proposed for transfer, acquisition and transfer, and cooperative activities/special uses. The information presented here is derived primarily from *The Potential Impact of Water Development at Proposed Timbisha Shoshone Reservation Sites on Groundwater Dependent Resource of Death Valley National Park and Ash Meadows National Wildlife Refuge* (Appendix E) ~~and other resources as cited in the text.~~; *Technical Report—Darwin Water Supply and Lower Centennial Flat—Water Resource Evaluation* (Appendix V); *Technical Report—Lower Centennial Flat Groundwater Exploration Drill Hole* (Appendix R); *Results of Recent Centennial Parcel Well Bailing Operations as Related to the Timbisha Shoshone Homeland* (Appendix W).

3.3.2.1 National Park Service

3.3.2.1.1 Land Transfer in Trust

Furnace Creek

Groundwater Hydrology. The Furnace Creek Community Development parcel, Buffer Areas, and Tribal Mesquite Use Area include the lower parts of Furnace Creek Wash, part of the Furnace Creek alluvial fan. The climate is hot and dry with only 1 or 2 inches of rainfall in most years. This site is hydrologically unusual in that both a flow system discharge area and the terminus of the flow system are present.

The area includes two types of aquifer basin-fill and carbonic-rock. Basin-fill aquifers consisting of deposits of sand and gravel make up much of the Furnace Creek alluvial fan. These materials are typically highly permeable and capable of yielding water to wells. Depending upon specific locations and well construction, potential well yields may range from several tens of gallons per minute to several hundred gallons per minute. These aquifers are present beneath much of the site between the mouth of Furnace Creek Wash and the Death Valley salt pan including the area beneath the Timbisha Shoshone village.

The regional carbonate-rock aquifer that underlies much of the eastern half of the flow system is present beneath the eastern part of the site. This aquifer transmits groundwater flow to Death Valley from upgradient parts of the flow system. Water is transmitted through fractures, and wells drilled in locations where large or numerous fractures are encountered are capable of yielding large amounts of water. Materials that impede groundwater flow include fine-grained basin-fill deposits of silt and clay present at the toe of the alluvial fan on the valley floor at the western margin of the site. These materials may also be interbedded with coarse-grained alluvial deposits beneath parts of the Furnace Creek alluvial fan. Clastic sedimentary rocks and perhaps crystalline basement rocks probably underlie the carbonate-rock aquifers. These rocks do not readily transmit water and form confining units adjacent to the carbonate-rock aquifers (Werrell 1998).

Located adjacent to the Death Valley playa, this site contains portions of the Furnace Creek discharge area composed of Travertine, Texas, and Nevares Springs, and unnamed seeps. These springs and seeps are situated above the valley floor on the upper parts of alluvial fans adjacent to the Funeral Mountains and their flow is reported to be approximately 1,200 gpm. These springs discharge about 5,100 acre feet per year of good-quality water. In the present climate, groundwater probably is more important than surface water as a source of water source for the saltpan. The formation of evaporate deposits and areas of patterned ground on the saltpan is dependent, in part, on the evaporation of saline groundwater.

Travertine and Texas Springs are developed water supplies that provide potable water and meet other water needs for the Timbisha Shoshone village, AmFac Inc., and Death Valley National Park headquarters and nearby campgrounds. Nevares Springs, also in the Furnace Creek discharge area, is developed and provides potable water and meets other water needs for the Cow Creek Area (Werrell 1998).

In the eastern part of the site groundwater occurs in fractures. The depth to water ranges from at or near land surface in the vicinity of the springs to several hundred feet at the east border of the site. Beneath the Furnace Creek Wash alluvial fan water occurs in openings in the granular alluvial deposits. Depth to water in this area ranges from a few feet at the edge of the saltpan to almost 100 feet at the upper edge of the fan. An NPS groundwater observation well is located along the northern border of the site, north of Travertine Springs. The present water level is about 74 feet. A test well on the Furnace Creek fan about 0.4 mile north of the site had a reported depth to water of 38 feet (Miller 1977).

There is little or no local replenishment of groundwater. Virtually all of the groundwater is supplied by inflow from recharge areas at higher elevations in the northern and eastern parts of the flow system. Ultimately this water originated as recharge from precipitation on upgradient parts of the flow system in Nevada. Water in the basin-fill aquifers is supplied by subsurface leakage from the carbonate-rock aquifers or by infiltration of spring discharge from the carbonate-rock aquifers. Groundwater inflow moves through or beneath the Amargosa Desert and Funeral Mountains to reach the Furnace Creek discharge area. This water is discharged by springs and adjacent areas of vegetation, and by evaporation of shallow groundwater at the margin and on the surface of the Death Valley playa.

Groundwater from the test well on the Furnace Creek fan had a dissolved solids content of 1,300 mg/L indicating that groundwater from the lower Furnace Creek fan may be brackish or saline and probably is not suitable for use (Werrell 1998).

Spring flow from the Furnace Creek discharge area is potable. The dissolved solids content of the water from Travertine and Texas Springs is reported to be 600–700 mg/L. These springs currently provide the water supply for Furnace Creek Inn, Furnace Creek Ranch, the Park headquarters, and the Timbisha Shoshone village.

Water supplies are obtained by diverting flow from the Furnace Creek discharge area springs and the alluvium of Furnace Creek Wash. Total discharge from Travertine and Texas Springs was measured to be about 5 cubic feet per second or 3,600 acre feet per year, and the Nevares Springs flow was determined to be 0.725 cubic feet per second (Pistrang and Kunkel 1964). Some orifices of Travertine and Texas Springs, and a French Drain system in Furnace Creek Wash, have been developed to supply a water storage and distribution system used by Fred Harvey Inc., Death Valley National Park, and the Timbisha Shoshone Village. Built in the late 1970s, the system permits water that is collected at springs during times when the storage tank is full to overflow the system in proximity to the source. This reduces to the extent possible the amount of water collected, keeping spring flow at or near the natural spring orifice to support native biota. Also, an Inn tunnel source captures alluvial water from Furnace Creek Wash, a portion of the flow is used by AmFac Inc. for irrigation, and the remainder is recharged to the alluvium. The two water collection systems are capable of diverting approximately 2.9 cubic feet per second. Studies have been conducted to possibly replace the current water collection system with an improved system that will return greater amounts of water to the environment.

Surface Water Hydrology. The Furnace Creek site is located just south of Furnace Creek Ranch and State Route 190 in Furnace Creek, California. The site is separated from the Black Mountains to the east by State Route 178 and from foothills of the Funeral Mountains to the northeast by State Route 178. Furnace Creek flows along the eastern edge of the Buffer Area, parallel to and just west of State Route 190. The southern and western portions of the Buffer Area contain a large mesquite grove extending down toward Middle Basin.

Topography. The site is a gently sloping alluvial fan with a incline of less than 3 percent falling to the west toward Salt Creek.

Elevation. Elevation on the development parcel ranges from 160 feet below mean sea level on the eastern side of the site to 200 feet below mean sea level to the west. The Buffer Area ranges from 40 feet below mean sea level in the northeast corner to 270 feet below mean sea level at its western edge.

Local Hydrology. State Routes 190 and 178 and Furnace Creek divert surface water flows from the Black Mountains and associated foothills before it reaches the development parcel. This limits surface water flow onsite to storm events that directly deposit precipitation onto the alluvial fan west of the highways and creek. Drainage observed onsite is limited to sheet flow with intermittent washes and minor

areas of channeling. These washes and minor channels begin and end onsite, are not contiguous, and do not form into a definable channel with an identifiable flow pattern.

Description of Onsite Drainages. The size of onsite drainage channels varies extensively. Very few have an identifiable bed or bank. Most were less than ten feet long with a width of approximately 2 to 3 inches (Figure 3).

3.3.2.1.2 Proposed Authorization of Private Land Acquisition

Indian Rancheria

Groundwater Hydrology. The Indian Rancheria parcels are located in Saline Valley, a basin that receives discharges from the Inyo Mountains to the west, the Nelson Range to the south and southwest, the Saline Range to the north, and portions of the Cottonwood Mountains (Panamint Range) and Last Chance Mountains to the north and east of the valley.

Discharges from tributary areas flow through a combination of intermittent surface flows and groundwater flows into the discharge area in the valley bottom. Springs are present at several locations in the local area. A salt lake is present in the valley bottom, which has intermittent surface water. Developed springs are present in the north-central and southern portions of Saline Valley.

Surface Water Hydrology. The site ~~incorporates a portion of~~ receives runoff from the Inyo Range ~~and an associated alluvial fan~~. The site is on the west side and near the center of Saline Valley and is transected by Inyo County Road 4013. Willow Creek is approximately 9.25 miles northwest of the site.

Topography. The topography of the alluvial fan is gently sloping from the northeast to the southwest. The Inyo Range, immediately west of the site, is steeply sloped and drops in elevation to the east onto the alluvial fan.

Elevation. Elevation of the alluvial fan ranges from 1,550 feet in the northeast to 1,320 feet above mean sea level in the southwest corner of the site.

Local Hydrology. Surface water flows through drainage channels and as sheet flow from the west and exits the site to the east.

Description of Onsite Drainages. Overall, Saline Valley is a terminal basin, receiving surface water flows during precipitation events from the ranges surrounding the valley. Major channels include an unnamed wash emerging from Dedeckera Canyon to the north and flowing toward the warm springs along the base of the Saline Range; Waucoba Wash entering the valley from the north, San Lucas Canyon to the southwest, and Grapevine Canyon to the south, between the Inyo Mountains and the Saline Range; several creeks draining the eastern slope of the Inyo Mountains; several creeks draining the Nelson Range/Hunter Mountain area, including Grapevine Canyon; and several intermittent washes draining the western slope of range to the east of the valley, including Dry Mountain and Ubehebe Peak.

The East of Waucoba Canyon Quadrangle USGS 7.5-minute series (topographic) map indicates approximately 8.4 miles of drainage channels occur on and surrounding the Indian Rancheria site in the valley. Channels are composed of numerous small tributary channels. The westernmost warm spring serves as the headwaters of a channel that discharges toward the salt lake. Surface water associated with the easternmost spring flows for a short distance from the spring and ends with no surface connection to the salt lake.

3.3.2.1.3 Tribal Cooperative Activity/Special Use Areas

Furnace Creek—Tribal Mesquite Use Area and Buffer Area

For a discussion of groundwater resources pertinent to the Furnace Creek—Tribal Mesquite Use Area and Buffer Area see the above Section 3.3.2.1.1, "Land Transfer in Trust: Furnace Creek."

Timbisha Shoshone Natural and Cultural Preservation Area

Hunter Mountain

Detailed studies regarding water supply and surface water hydrology have not been conducted for this area. Because the proposed cooperative activities do not involve permanent development, a detailed evaluation of water resources was not conducted as part of this LEIS. A summary of conditions, available from review of USGS 7.5-minute quadrangle map for Jackass Canyon, is provided below.

Major drainages beginning on Hunter Mountain include Grapevine Canyon, which drains to the northwest; Mill Canyon, which drains to the south; and unnamed drainages trending to the east toward Dead Horse Canyon and Marble Canyon. Numerous springs occur on Hunter Mountain at the middle elevations.

Wildrose

Detailed studies regarding water supply and surface water hydrology have not been conducted for this area. Because the proposed cooperative activities involve development only within an already developed area (Wildrose Ranger Station), a detailed evaluation of water resources was not conducted as part of this LEIS. A summary of conditions, available from review of USGS 7.5-minute quadrangle map for Emigrant Pass, is provided below.

Wildrose Campground and Ranger Station are located in Wildrose Canyon at an elevation of approximately 4,700 feet above mean sea level. An intermittent stream flows through the canyon from east to west. Rattlesnake Canyon Wash flows into Wildrose Canyon approximately 1/2 mile west of the Wildrose Ranger Station. A well supplying the ranger station and campground is located in Wildrose Canyon, approximately 3/4-mile east of the ranger station.

Saline Valley Warm Springs

~~For a description of water resources for Saline Valley Springs, see Section 3.3.2.1.2 "Proposed Authorization of Private Land Acquisition, Indian Rancheria."~~ Saline Valley Warm Springs include a series of surface water features in the northeast portion of Saline Valley. These springs are perennial and drain intermittently by surface flow generally to the southwest toward Salt Lake. The springs occur along an alluvial fan at the base of the Saline Range.

Elevation at the Springs range from approximately 425 feet elevation at Lower Warm Spring to approximately 550 feet at Upper Warm Spring. The Saline Valley Warm Springs complex is located seven to ten miles northeast of the Indian Rancheria parcels.

Other Special Use Areas

Mesquite Springs

This area is located at an elevation of approximately 1,750 feet above mean sea level. Detailed studies regarding water supply and surface water hydrology have not been conducted for this location. Because the proposed cooperative activities do not involve more than minimal permanent development (e.g., an information booth or similar small-scale economic development), a detailed evaluation of water resources was not conducted as part of this LEIS. A summary of conditions, available from review of USGS 7.5-minute quadrangle map for East of Tin Mountain, is provided below.

Mesquite Springs and Mesquite Springs Campground are located adjacent to Death Valley Wash. This area receives discharges from Death Valley Wash entering this location from the north, and from Grapevine Canyon in the Grapevine Mountains to the east . Drainage from the Cottonwood Mountains (Panamint Range) discharges into Death Valley Wash from the west above and below Mesquite Springs. The springs also receive surface discharge from Grapevine Canyon to the east and represent a secondary discharge of water from Grapevine Springs to the north. Water from a well at the springs is used at the campground for domestic uses.

Daylight Pass

Daylight Pass occupies an area in Boundary Canyon, along both sides of Nevada State Route 267 leading from Death Valley to Beatty, Nevada. The area extends from north of the intersection of Mud Canyon Road, over Daylight Pass (4,318 feet above mean sea level), and into Nevada, along Nevada State Route 374 approximately 5 miles northeast of the California-Nevada state line. Detailed studies regarding water supply and surface water hydrology have not been conducted for this location. Because the proposed cooperative activities do not involve more than minimal permanent development (e.g. an information booth or similar small-scale economic development), a detailed evaluation of water resources was not conducted as part of this LEIS. A summary of conditions, available from review of USGS 7.5-minute quadrangle map for Daylight Pass, is provided below.

Boundary Canyon separates the Grapevine Mountains to the north and the Funeral Mountains to the south, receiving drainage from tributaries in both ranges. Several springs are present in the vicinity of Daylight Pass and along State Route 267 through Boundary Canyon. Hole in Rock Spring is located just northwest of the highway, approximately 1.8 miles north of the intersection with Mud Canyon Road. Daylight Spring is located ½ mile west of the highway at the summit of Daylight Pass.

3.3.2.2 Bureau of Land Management

3.3.2.2.1 Land Transfers in Trust

Death Valley Junction

Groundwater Hydrology. The Death Valley Junction site is in the Amargosa Desert, which is in the Death Valley groundwater flow system. The Amargosa Desert is topographically open and surface flow drains to Death Valley via the Amargosa River. The climate is hot and dry with only 2 to 4 inches of rainfall in most years. During rare, wet periods, the Amargosa River flows through the area south of the site. ~~part of the site~~.

Basin-fill aquifers underlie the entire area to depths probably in excess of 1,000 feet. The basin-fill aquifers consist of deposits of sand and gravel that are interbedded with layers of silt and clay. Sands and

gravels are capable of readily yielding water to wells whereas the silt and clay layers yield little or no water to wells. These fine-grained deposits impede groundwater flow. They occur as horizontal or lenticular deposits, consequently they impede vertical movement of water more than horizontal movement. This causes the water at depth to be confined. Fine-grained deposits are most abundant in the southeastern part of the site. Depending upon specific locations and well construction, potential well yields may range from several tens of gallons per minute to several hundred gallons per minute.

The southeast part of the site is adjacent to a playa and the basin fill there may contain thick deposits of clay. Wells drilled in that part of the site may produce only small amounts of water. Carbonate-rock aquifers underlie the basin fill at an undetermined depth at this site. They transmit regional groundwater flow to Death Valley from upgradient parts of the flow system. Clastic sedimentary rocks and perhaps crystalline basement rocks probably underlie the carbonate-rock aquifers. These rocks do not readily transmit water and form confining units adjacent to the carbonate-rock aquifers.

Most of the groundwater resources at the Death Valley Junction site is supplied by subsurface inflow from the flow system. Water in the basin-fill aquifers is mostly from recharge areas in Pahute Mesa/Timber Mountain and vicinity in the northern part of the flow system. Water in the underlying carbonate-rock aquifers is mostly from recharge areas in the northeastern part of the flow system in central Nevada that supply springs in the Ash Meadows area as well as supporting some subsurface flow beneath the Amargosa Desert to Death Valley. Under current climate conditions, flow in the Amargosa River is infrequent but during periods of flow some recharge may occur, mostly in areas north of the site. Groundwater occurs in openings in the granular basin-fill deposits. There is little or no local replenishment of groundwater. During wet years there is some infiltration of water from the Amargosa River during the typically short periods of flow.

Virtually all water is supplied by subsurface inflow from areas to the north. Little or no recharge occurs on the site; however, about 600 acre feet per year of recharge from precipitation occurs in the Amargosa Desert. The Amargosa Desert also receives substantial flow system inflow through carbonate rocks, volcanic rocks, and basin-fill deposits of tributary basins to the north. Natural discharge by evapo-transpiration in the Amargosa Desert totals about 24,000 acre feet per year. This includes about 17,000 acre feet per year in Ash Meadows and about 7,000 acre feet per year in the Alkali Flat discharge area east of the site. There is also an estimated 3,000 to 19,000 acre feet per year of subsurface outflow into Death Valley. Virtually all of this water originates as subsurface inflow from upgradient flow system areas north and east of the Amargosa Desert.

The depth to water ranges from a few feet in the central and eastern part of the site to several tens of feet in the southwest part of the site. A well at Death Valley Junction monitored by the U.S. Geological Survey had depths to water ranging from 3.5 to 7 feet. Groundwater flow in the basin fill generally moves from higher areas north of the site toward the playa just southeast of the site.

Groundwater quality is considered marginal for domestic use. A sample from a well 146 feet deep had a total dissolved solids content of 874 mg/L, a sodium content of 325 mg/L, and bicarbonate content of 556 mg/l. It also had a boron content of 1.3 mg/L. There are several wells pumped for domestic purposes at Death Valley Junction. Also, extensive development is occurring in the Nevada part of the Amargosa Desert north and east of the site. Some wells in the vicinity of Death Valley Junction are currently pumped for domestic water supplies, but the current level of pumping at or near the site is considered low. About 12,600 acre feet were pumped in the Amargosa Desert in 1994 and about 15,000 acre feet were pumped in 1995. If all permits and certificates to pump groundwater are exercised, total pumpage from the Amargosa Desert would exceed 40,000 acre feet per year.

The quality of water pumped from shallow wells in the area is marginal for household use and would require treatment. It is estimated that between 10 and 20 acre feet could be withdrawn annually from the basin-fill aquifer in this area with only a localized effect (*Secretarial Report*).

Surface Water Hydrology. The Death Valley Junction parcel is located on an alluvial fan associated with the Funeral Mountains to the northwest and the Greenwater Range to the west. It is adjacent to the west side of the town of Death Valley Junction. California State Routes 190 and 127 intersect on the eastern boundary of the parcel. State Route 190 cuts across the middle of the parcel from east to west. There are numerous flood control levees located on the site. These levees serve to divert surface water flow away from State Route 190 and around areas of development. A historic abandoned railroad grade cuts across the southeast corner of the property. A borrow pit is located adjacent to State Route 127 in the northeast portion of the property.

Topography. The site includes a flat area and a gently sloping alluvial fan with less than a 2 percent slope falling to the east toward the town of Death Valley Junction.

Elevation. Elevation at the Death Valley Junction site ranges from 2,120 feet above mean sea level at the western edge of the parcel to 2,010 feet above mean sea level to the east.

Local Hydrology. Hydrology on the parcel consists mainly of sheet flow from the Funeral Mountains to the northwest and the Greenwater Range to the west. Surface water flow from the mountains and along State Route 190 is diverted through the parcel to the northeast and southeast by several levees.

Description of Onsite Drainages. Four levees, located north of State Route 190, divert surface water to the northeast away from the highway and the town of Death Valley Junction and toward State Route 127. Drainages associated with these levees were limited to sheet flow with intermittent washes and minor areas of channeling. Evidence of surface water flow is intermittent along these levees. Evidence of surface water flow running into the borrow pit was limited to a saturation line and dried, cracked soils that terminated with similar evidence in the pit. One levee located south of State Route 190 diverts surface water around the town and an unpaved airstrip situated west of town. This levee is composed of two branches. The main branch runs southeast from State Route 190 to the southwestern end of the town where surface water continues southeast through a culvert under State Route 127. The second branch separates from the main one at a point due west of town and runs northeast. Surface water flow is diverted to the north of town and runs east under State Route 127. The southeast running channel is approximately 2,192 feet in length. The northeast running channel is approximately 3,034 feet in length. Two additional drainages begin approximately 30 feet northwest of the levee split and parallel the levees to carry additional surface water flow around the airstrip and town.

Centennial

Groundwater Hydrology. Local water supplies at the Centennial parcel consist of ground and surface water. A potential source of surface water is Lower Centennial Spring, located southwest of the parcel, and Black Rock Spring, located due south of the parcel. Water rights exist on both springs totaling 2.97 acre feet per year. The water quality may be marginal and could require treatment for domestic use. Groundwater resources in the area are generally not well known. Under a cooperative effort of the Bureau of Reclamation, Bureau of Indian Affairs, and the Bureau of Land Management an exploratory well was drilled approximately 1 mile north of the Centennial parcel to assess groundwater availability for the Tribe's intended use (Bellinger, 1999b) Monitoring conducted at this well since its installation indicates that groundwater at the well location does not represent a sustainable supply (Appendix W.)

Surface Water Hydrology. The 640-acre Centennial parcel is located on Lower Centennial Flat, north of the Coso Range. China Lake Naval Weapons Station is located south of the site on the other side of the Coso Range. The parcel begins approximately 2 miles south of State Route 190, and 0.5 miles south of the Gill Corral. The location of this parcel has been shifted since publication of the *Secretarial Report*. The present location of the Centennial parcel is approximately 2.2 miles northeast of the parcel described in the *Secretarial Report*.

Topography. Topography on the parcel is relatively flat and moderately sloped, trending downward from southwest, south, and southeast toward the northwest.

Elevation. The site ranges from approximately 4,780 feet above mean sea level at the northern edge of the parcel to approximately 4,900 feet above mean sea level in the southeastern corner of the parcel.

Local Hydrology. Runoff from the Coso Range flows onto the site via three defined channels trending southwest-to-north-northeast and by sheet flow. Additional drainage onto the site originates offsite at higher elevations of Lower Centennial Flat. One well-defined channel, and several poorly defined channels enter the site from the south and southeast, flowing toward a wash just north of the parcel boundary. The estimated combined length of channels on this parcel is 4.1 linear miles.

Description of Onsite Drainages. The drainage entering the parcel from the southwest separates into multiple channels, all of which terminate inside the parcel boundary. The two drainages flowing from the Coso Range join together at the northern end of the parcel and continue offsite to the wash north of the parcel boundary. Two additional drainages, flowing from higher elevations of Lower Centennial Flat, enter through the eastern boundary of the parcel. The first drainage, which flows onto the southern half of the parcel, joins the drainages flowing from the Coso Range. The second drainage flows through the northeastern corner of the site and joins the confluence of the Coso Range drainages at a point north of the parcel boundary.

Scotty's Junction

Groundwater Hydrology. Scotty's Junction is situated on the valley floor at the upper end of Sarcobatus Flat, in the Death Valley groundwater flow system, just north of an area where shallow groundwater is discharged and supports a small riparian shrub community. Sarcobatus Flat is a topographically closed basin with groundwater inflow and outflow to other parts of the flow system.

Basin-fill aquifers underlie the entire area to depths probably in excess of 1,000 feet. These aquifers are underlain by volcanic rocks and possibly some carbonate rocks. The basin-fill aquifers consist of deposits of sand and gravel that are interbedded with layers of silt and clay. Sands and gravels are capable of readily yielding water to wells whereas the silt and clay layers yield little or no water to wells. These fine-grained deposits impede groundwater flow. They occur as horizontal or lenticular depots, consequently they impede vertical movement of water more than horizontal movement. This causes the water at depth to be confined. Fine-grained deposits are most abundant in the southern part of the site. Depending upon specific locations and well construction, potential well yields may range from several tens of gallons per minute to several hundred gallons per minute. An irrigation well in Section 8, T. 8. S., R. 44 E. reportedly yielded 530 gpm with a drawdown of 40 ft. Volcanic rocks border and underlie most of Sarcobatus Flat. Where brittle and fractured these rocks form productive aquifers. Volcanic-rock aquifers transmit subsurface inflow to Sarcobatus Flat from adjacent upgradient areas and transmit subsurface outflow to Death Valley. Carbonate rocks are exposed in the Grapevine Mountains south of Sarcobatus Flat. Some carbonate rocks may underlie parts of the basin fill but if present they probably are localized. Carbonate-rock aquifers transmit some regional groundwater flow to Death Valley through parts of the Grapevine Mountains.

Groundwater occurs in openings in the granular basin-fill deposits. The depth to water ranges from less than 15 feet beneath the playa at the southern part of the site to more than 100 feet at the northern end of the site. At Scotty's Junction, depth to water in a 203 feet deep well was reported to be 94 feet in 1961 (Malmberg and Eakin 1962). Groundwater flow on the site in the basin fill is generally to the south toward the playa. Flow directions in the fractured rock aquifers beneath the basin are not known but water probably flows southwest towards Death Valley.

The groundwater resource at the Scotty's Junction site is supplied by recharge generated within Sarcobatus Flat and by subsurface inflow from adjacent upgradient areas. Sarcobatus Flat receives about 1,300 acre feet per year or subsurface inflow from Lida Valley and Cactus Flat. About 3,000 acre feet per year of groundwater is discharged by evapo-transpiration from shallow groundwater areas around the playa in Sarcobatus Flat. There is also about 500 acre feet per year of subsurface outflow to Death Valley (Malmberg and Eakin 1962). The apparent imbalance between recharge and discharge exists because of unresolved errors in the estimates of one or more of these hydrologic factors. Recent and ongoing investigations estimate higher rates of inflow and outflow for Sarcobatus Flat, but have not resolved this apparent imbalance.

Groundwater at Scotty's Junction has a dissolved solids content of about 560 mg/L which suggests that it should be suitable for most uses; however, the fluoride content was 2.7 mg/L and may pose some limits for use without treatment (Malmberg and Eakin 1962).

Surface Water Hydrology. The Scotty's Junction parcel is located on an alluvial fan located at the northern end of Sarcobatus Flat. Sarcobatus Flat is a topographically closed valley basin located southeast of Slate Ridge. The intersection of U.S. Highway 95 and State Route 267 is located just north of the parcel. U.S. Highway 95 runs northwest to southeast along the eastern edge of the property. State Route 267 runs from northeast to southwest passing through the northwest corner of the site.

Topography. The topography onsite is relatively flat with less than a 1 percent slope. The general direction of this slope is from north to south.

Elevation. Elevation ranges from 4,050 feet above sea level at the northern boundary of the site to 3,990 feet in the southeast corner of the site.

Local Hydrology. Three main drainage channels, with several associated side drainages, direct surface flows from north into a maintained flood control channel. The flood control channel cuts across the northwest corner of the parcel and runs parallel to and approximately 50 feet from the northern side of State Route 267. Surface water flows from the flood control channel south through numerous culverts under State Route 267. This surface water flow continues south down onsite drainages and eventually flows offsite to the south.

Description of Onsite Drainages. Approximately 13 miles of definable drainages were observed onsite. Of this, approximately 0.8 miles conveys surface water flow from the north into the flood control channel found onsite. Nine culverts convey surface water flow under State Route 267 onto the southern portion of the site. Seven distinct drainage channels, totaling approximately 11.4 linear miles, carry surface water flows across the parcel, continuing off of the parcel to the south. All seven channels show a distinct top of bank, erosion features, and evidence of deposition and sedimentation in the streambeds. Runoff associated with two of the nine culverts flows into larger channels found onsite. The section of flood control channel in the parcel is approximately 1 mile in length and has some areas with a definable bed and bank. These areas correlate with the drainage channels entering the site from the north and continuing south through the culverts. Evidence of surface water flow from three drainage channels from the north and the start of

nine drainage channels associated with the culverts to the south are easily definable along this flood control channel.

Lida Community Parcel

Groundwater Hydrology. The characteristics of groundwater hydrology are equivalent for the Lida Community parcel, Lida Ranch, and Lida Tribal Use Area. Each location is in a mountainous area underlain by noncarbonate sedimentary and igneous rocks and shallow alluvial deposits. Deep basin-fill aquifers and extensive carbonate-rock and volcanic-rock aquifers are not present. Groundwater is transmitted through shallow alluvial aquifers and zones of fractured noncarbonate sedimentary and igneous rock. Shallow alluvial aquifers consist of deposits of sand, gravel, and some silt or clay. They have been deposited in local depressions or relatively flat areas and overlie noncarbonate sedimentary rocks. Their thickness is variable and not precisely known. Most of these deposits are provably between several feet to several tens of feet thick but in some areas thickness could exceed 100 feet.

Sand and gravel are capable of readily yielding water to wells but thin zones of saturated material and a restricted extent will adversely affect sustained pumping yields. Depending upon specific locations and well construction, potential sustained well yields may range from several gallons per minute to several tens of gallons per minute. Higher yields may be possible if areas of relatively thick and extensive alluvium are discovered. The noncarbonate sedimentary and igneous rocks are an assemblage of quartzite, sandstone, shale, intrusive rock, and some volcanic rock. These rocks generally impede groundwater flow and transmit water readily only where they contain numerous open and interconnected fractures. Their main function, where they are permeable enough, is to transmit mountain recharge to downgradient valleys (Fish Lake Valley, Clayton Valley, Lida Valley, and Death Valley). High well yields are not probable but may be possible in localized areas. In many areas the noncarbonate sedimentary and igneous rocks act as relative barriers to groundwater flow. One consequence of this is that there are numerous small springs in the Palmetto Mountains and Magruder Mountain.

Groundwater occurs in openings in granular deposits of shallow alluvial aquifers and in fractures of noncarbonate sedimentary and igneous rocks. The depth to water ranges from a foot or less near springs and seepage areas to more than 100 feet in other parts of the site.

The Lida area is supplied by both surface and groundwater. Surface supplies consist of several springs and the groundwater is supplied by an alluvial fill aquifer primarily recharged by local precipitation. Annual recharge in the area is estimated to be 150 acre feet per year. Local yield may be only about 30 acre feet per year (*Secretarial Report*).

Recharge is generated by infiltration of local precipitation on the site. Probably between 3 and 7 percent of the precipitation ultimately becomes recharge to adjacent valleys. Some additional recharge that supports discharge for perched springs also occurs.

Estimates of recharge are not available. There is no subsurface inflow; the water supply is generated entirely from precipitation that falls within the area. Groundwater is discharged by subsurface outflow to downgradient parts of the Death Valley groundwater flow system and by several small local springs. During wet years following intense rainfall, stream flow drains to each of the four basins.

Water quality is satisfactory for most uses. No samples were available from the site, but a spring at the town of Lida was reported to have a specific conductance of 595 and Pigeon Spring just east of the area had a specific conductance of 446; however, there may be local variability.

The area has experienced little pumping of groundwater. Several domestic wells may be located along Nevada State Route 266 and in Lida. Field examinations will be needed before the amount of existing pumping can be determined. North of the site, significant pumping exists in both Fish Lake and Clayton valleys. The Nevada Division of Water Resources lists both areas as having committed resources greater that the estimated yields.

Surface Water Hydrology. The Lida Community parcel consists of 2,800 acres straddling Nevada State Route 266, which runs east to west through the southern section of the site. The majority of the site is located north of the highway in the Palmetto Mountains. The southern portion of site is composed of the foothills leading up to Magruder Mountain, which is located southwest of the site boundary. The project site is adjacent to and wraps around the historic town of Lida to the north and west.

Topography. The site is composed of rugged terrain with slopes ranging from moderate to steep. The site is moderately sloped in the immediate vicinity of Lida. Topography on the site gets steeper at the site boundaries north into the Palmetto Mountains and south into the Magruder Mountain foothills.

Elevation. The elevation ranges from 6,300 feet to 7,200 feet above sea level north of State Route 266. South of State Route 266 the elevation ranges from 6,200 feet to 6,600 feet above sea level.

Local Hydrology. Several drainage channels carry runoff from the Palmetto Mountains, through the parcel, to stock ponds located in and around the town of Lida and to an intermittent channel that runs parallel to the south side of State Route 266. Runoff from Magruder Mountain flows through two small drainage channels into this channel. The channel conducts surface flows offsite to the east, through Lida Canyon, and eventually into Lida Valley.

Description of Onsite Drainages. Approximately 16.29 linear miles of drainages composed of 15 channels occur on the Lida Community parcel. All showed intermittent signs of hydrology such as a bed and bank, erosion features, and deposition and sedimentation in their streambeds. At some locations, drainages were undefined in terms of hydrologic features, except that they were located at the base of narrow canyons between surrounding hillsides. Farther downstream, evidence of hydrology was again observed. Of the fifteen drainage channels, 12 flow from the Palmetto Mountains offsite to the south and southeast. Two drainages originate in the Magruder Mountain foothills to the south and flow from south to north. A large intermittent channel located alongside State Route 266 runs onto the site from the west and offsite to the east. Five of the drainage channels from the Palmetto Mountains flow through the site and empty into small stock ponds located in and around the town of Lida. A sixth drainage empties into a small wetland located just offsite adjacent to an abandoned airfield and the dirt road leading onto the site.

3.3.2.2.2 Proposed Authorization of Private Land Acquisition

Lida Ranch

Groundwater Hydrology. For a discussion of groundwater resources pertinent to the Lida Ranch parcel, see Section 3.3.2.2.1, "Land Transfers in Trust: Lida Community Parcel."

Surface Water Hydrology. Lida Ranch is composed of four private parcels in the vicinity of the town of Lida and the Lida Community parcel. All four parcels are situated in the Palmetto Mountains. Two parcels are contiguous with the Lida Community parcel (discussed below), including one that is adjacent to the town of Lida. The remaining two parcels are located southeast of the Lida Community parcel and overlie Lida Canyon. Both of these parcels straddle State Route 266, which runs east-to-west through Lida Canyon.

Topography. The Lida Ranch parcels range from moderate to steep slopes and contain areas of rugged terrain. The two parcels contiguous to the Lida Community parcel are moderately sloped whereas steep slopes and rugged terrain exists at the two parcels bisected by State Route 266 and Lida Canyon.

Elevation. The two parcels adjacent to the Lida Community parcel range in elevation from 6,700 to 6,900 feet above mean sea level. The two parcels located southeast of the Lida Community parcel range in elevation from 5,700 feet to 6,600 feet above mean sea level.

Local Hydrology. Surface water flow from the Palmetto Mountains travels in a northwest to southeast orientation. A spring is located at the top of a drainage channel on the westernmost parcel. A wet meadow and stock pond are located on the parcel adjacent to the town of Lida. An intermittent channel that runs east and parallel to State Route 266, bisecting the two parcels that overlie Lida Canyon. This channel serves as the main outflow drainage for the Lida Community parcel and Lida Ranch sites.

Description of Onsite Drainages. There are approximately 1.3 miles of drainage channels on the two parcels adjoining the Lida Community parcel. This total is divided among three identifiable channels that run southeast into the stock pond. The stock pond is less than 0.1 acres in size and currently contains water. A drainage channel from the Lida Community parcel terminates at the wet meadow. The wet meadow is less than 0.1 acre in size and currently ponds water that is supplied by an irrigation pipe from the upper spring. A drainage channel approximately 0.4 miles in length is periodically supplied with surface flow from the spring located in the northwest corner of the westernmost parcel. Both the stock pond and wet meadow are adjacent to a dirt road providing access to the Lida Community parcel and Lida Ranch sites. The intermittent channel through Lida Canyon bisects the two sites found southeast of the Lida Community parcel. Approximately 1 mile of this creek bed runs through the two sites from the northwest and intermittently carries surface water southeast into Lida Valley.

3.3.2.2.3 Tribal Cooperative Activity/Special Use Areas

Eagle Mountain and Warm Sulphur Springs

Warm Sulphur Springs is a spring at the base of the mountains. No water requirements are associated with cooperative activities or special uses at these locations.

Lida Tribal Use Area

For a discussion of groundwater resources pertinent to the Lida Tribal Use area, see Section 3.3.2.2.1, "Land Transfers in Trust: Lida Community Parcel." Detailed studies regarding water supply and surface water hydrology have not been conducted. Because the proposed cooperative activities do not involve permanent development, a detailed evaluation of water resources was not conducted as part of this LEIS.

3.3.2.3 U.S. Fish and Wildlife Service

3.3.2.3.1 Tribal Cooperative Activity Area

Ash Meadows National Wildlife Refuge

The Ash Meadows National Wildlife Refuge is in the Ash Meadows portion of the Amargosa Desert and includes about 22,117 acres of spring-fed wetlands and alkaline desert uplands. Ash Meadows is a discharge point for a highly transmissive carbonate-rock aquifer that is widely distributed beneath the basins and ranges lying to the northeast. This aquifer drains a subarea of the flow system that covers

about 10,000 square miles and discharges about 17,000 acre foot per year of water from about 30 springs (Dettinger, 1999).

Both Ash Meadows Refuge and the adjoining Devils Hole area are susceptible to impacts from pumping in adjacent areas. Also, sustained pumping from the Amargosa Desert and some upgradient areas will reduce spring discharge at the refuge and lower the pool level of Devils Hole.

3.4 SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE

This section provides a description of the existing socioeconomic conditions on lands proposed for transfer, acquisition and transfer, and cooperative activities/special uses. This section was prepared by gathering current socioeconomic data from the National Park Service records, the Bureau of Land Management, and Esmeralda, Nye, and Inyo counties.

3.4.1 Regional Setting

To define the existing conditions for the socioeconomic environment in the Death Valley National Park region, a potential region of influence was identified. The region of influence is the area in which the principal direct and secondary socioeconomic effects of the Proposed Action are likely to occur and are expected to be of the most consequence for local jurisdictions. The socioeconomic information presented in this LEIS discusses current conditions in a region of influence encompassing three counties: Inyo County, California, and Nye and Esmeralda counties in Nevada. General information regarding each of these communities is provided below.

Inyo County

In terms of square miles, Inyo County is the second largest county in California. Bishop is the only incorporated city in the entire county, although there are a number of communities in the county, including Big Pine, Independence, Lone Pine, Keeler, Olancha/Cartage, Darwin, Furnace Creek, Shoshone, and Tecopa. The county seat is in Independence. Inyo County encompasses 10,192 square miles, with 92 percent of the land in federal ownership, and an additional 6.3 percent in state or city ownership, leaving only 1.7 percent in private ownership. Over 98 percent of the land is either administered by county, state, and federal agencies or is held by several Native American groups. Of the areas included in the proposed legislative action Furnace Creek and vicinity, Death Valley Junction, Centennial, Saline Valley, Wildrose, Hunter Mountain, Eagle Mountain, and Warm Sulphur Spring are located in Inyo County.

Nye County

Nye County, located in the south-central portion of Nevada east of Death Valley National Park, is the largest county in Nevada, covering approximately 18,064 square miles. Created out of the eastern portion of Esmeralda County in 1864, it was founded on mineral wealth and remains one of the leading gold-producing counties in Nevada. Nye County is home to the Nellis Test and Training Range, ~~the Stealth Bomber Group,~~ and the Yomba and Duckwater Indian Reservations. Nye County is also home of the Nevada Test Site (NTS), where testing of weapons for defense and for peaceful use of nuclear explosives was conducted for nearly 40 years. Nye County is the site location for a major federal action, specifically the nuclear waste repository at Yucca Mountain, located at the NTS.

The federal government (BLM, USFWS, and NPS) manages approximately 74 percent of the land area in the county (Nevada Division of Water Planning 1999). Mining, federal installations, tourist and recreation attractions, and grazing allotments all occur largely on public land in Nye County (Nye County Board of Commissioners 1993). Nye County has one incorporated city (Gabbs) and a number of unincorporated towns (Amargosa, Beatty, Mahattan, Pahrump, Round Mountain, and Tonopah). These communities are widely separated and have very different local economies. Of the areas included in the proposed legislative action, Scotty's Junction, Ash Meadows National Wildlife Refuge, and a portion of Daylight Pass are located in Nye County.

Esmeralda County

Esmeralda County, located in the southwestern portion of Nevada east of Death Valley National Park, covers approximately 3,570 square miles. Like Nye County, Esmeralda County's history is closely linked with its mineral wealth, particularly gold. Approximately 98 percent of the county's total area is controlled and managed by the federal government (BLM, USFWS, and NPS). This area includes lands of the Inyo National Forest and Death Valley National Park. The major communities in Esmeralda County are Goldfield and Silver Peak. Of the areas included in the proposed legislative action, the Lida parcels and specialized areas are located in Esmeralda County.

The following sections address population, demographic characteristics, the economy and employment, housing, schools/and other public services in the three-county region of influence. Issues pertaining to Environmental Justice pursuant to Executive Order 12298 are also addressed. Pertinent socioeconomic information provided in these sections was extracted from U.S. Census data, an analysis entitled *Economic Impact Analysis: Northern and Eastern Mojave Planning Area* (Dean Runyan and Associates 1998), and other relevant studies.

3.4.2 Population and Demography

Population and demographic characteristics of Inyo County, California, and Nye and Esmeralda counties in Nevada are presented in Table 1. Between 1990 and 1997 (2nd quarter), the population in Nye County increased by ~~52~~ 73 percent, to a total of ~~27,168~~ 31,298 persons. Population estimates compiled on behalf of the Nye County Socioeconomics Program show the total Nye County population reaching ~~32,269~~ 32,164 persons by the fourth quarter of 1997, and ~~35,634~~ 35,524 persons by the fourth quarter of 1998 (Planning Information Corporation 1999). Estimates prepared on behalf of the Nye County Department of Natural Resources and Federal Facilities (Planning Information Corporation 1998) show Nye County reaching a total population of 37,990 persons by the year 2000. The population in Inyo and Esmeralda counties has increased at a much slower rate, with Inyo County increasing by only 0.1-percent from 1990 to 1997, while Esmeralda County experienced a decline in population of 13.3-percent. The demographic profiles for the counties are similar in terms of the age distribution and racial composition. Inyo County's population has the highest percentage of Native Americans.

Based on 1997 population estimates (2nd quarter), the density in Inyo County was 1.8 persons per square mile. Esmeralda County's population density was approximately 0.4 persons per square mile, and Nye County's population density was approximately ~~1.5~~ 1.75 persons per square mile, as compared to an average population density of 16.1 persons per square mile for the entire State of Nevada in 1997. An estimate prepared for the Nye County Socioeconomics Program places the Nye County population at ~~36,065~~ 38,442 persons during the fourth quarter of 1999, increasing population density to approximately ~~two~~ 2.2 persons per square mile.

Southern Nevada, including portions of Nye County, has been and continues to be one of the fastest growing areas in the nation, and Nevada is the fastest growing state. Between 1950 and 1997, the growth rate averaged 4.8 percent per year. From 1990 to 1997, the annual growth rate in Nevada was ~~4.5~~ 8.2 percent as compared to a 1 percent growth rate in the United States. In 1998, the U.S. Bureau of the Census identified Nye County as one of the fastest-growing counties in the United States in the category of towns with 10,000 or more persons, having experienced an increase in population of 6.1 percent from 1997 through 1998. According to Nye County sources, their population is projected to reach 51,160 by 2008, thereby experiencing a growth rate of 51.6 percent since 1998 (Planning Information Corporation 1998).

In Nye County, the community of Pahrump, located about 60 miles west of Las Vegas, contains the majority of Nye County's population estimated at approximately 26,231 persons during the first quarter of 1999, while Tonopah, the county seat, has only about 3,369 persons during the same reporting period (Planning Information Corporation 1999). Pahrump is becoming the focal point of economic growth in Nye County; it is serving as a retirement area and "bedroom" community for Las Vegas (Nevada Division of Water Planning 1999). In Esmeralda County, more than half of the 1997 total population resided in either Goldfield (550 persons) or Silver Peak (210 persons). From 1950 through 1997, Esmeralda County's population averaged a growth rate of 1.9 percent as compared to 5.2 percent for the entire state of Nevada.

Information on some of the key communities in the three-county region of influence is provided below.

Lone Pine, Independence, and Big Pine, California (Inyo County)

Lone Pine has a population of 2,062; Independence, 655; and Big Pine, 1,610. These communities are along U.S. Highway 395. Most services are available in Lone Pine, including a school with elementary through high school classes, and several markets, and restaurants. Police protection is available through the Inyo County Sheriff's Department. Available housing is limited. Ownership of water rights, which are held almost entirely by the City of Los Angeles Department of Water and Power, limits growth in the valley. Employment is provided by agriculture, wholesale and retail trade, and finance and service related jobs.

Bishop, California (Inyo County)

The 1990 Census reported the population of 3,475 for Bishop, which is the largest community in Inyo County. The community offers a variety of services including city parks, a recreational complex, county fairgrounds, and a variety of businesses including motels, gas stations, markets, restaurants, and medical services. There are two elementary schools, one high school, and a community college. There are several outdoor recreational areas close to the town that provide opportunities for hiking, fishing, camping and other outdoor recreational activities. Most of the employment is in retail sales, travel, dining, recreational services, other services, and local government.

Furnace Creek, California (Inyo County)

Furnace Creek is a small town in Death Valley National Park with a post office, elementary school, general store, gas station, airstrip, law enforcement department, and volunteer fire department. In 1996, an estimated 98 percent of the 95 full-time and 14 seasonal NPS employees resided in the Park. Also located in Furnace Creek is the Furnace Creek Ranch, a private inholding owned by AmFac Inc. Currently, AmFac has between 300 to 325 employees living at Furnace Creek, 89 to 90 living at Stovepipe Wells and 6 living at Scotty's Castle. About 50 Timbisha Shoshone tribal members live at Furnace Creek on a parcel of Park land located south of Furnace Creek Ranch.

Shoshone, California (Inyo County)

Shoshone has a population of 79 and is dominated by one family. Public services include a post office, gas station, general store, small cafe, motel, medical clinic, and elementary school. The San Bernardino County Sheriff, California Highway Patrol, and NPS rangers share an office in Shoshone and provide emergency services to Shoshone. Available housing is limited.

Pahrump, Nevada (Nye County)

Pahrump, has a population of 26,231 (Planning Information Corporation 1998). Projections provided by Nye County show the population of Pahrump reaching 40,143 persons by the year 2008 (Planning Information Corporation 1999). This community is the nearest source of most major services for residents of the Furnace Creek area. The community has shifted from an agricultural economic base to being a "bedroom" community for Las Vegas, which is about 60 miles to the east. The community is growing at a fast pace. Almost all services are available, including schools, an urgent care clinic, two franchise grocery stores, banks, and other community services. Housing is available with minimal land modification requirements and currently there are no zoning restrictions. Zoning restrictions are under development by the Pahrump Regional Planning Commission and the Nye County Department of Planning.

Beatty, Nevada (Nye County)

Beatty, (including the area around Scotty's Junction), reported a population of 1,623 in the 1990 U.S. Census. Nye County estimates show Beatty's population at 1,824 persons during the first quarter of 1999 (Planning Information Corporation 1999). Gaming, mining, and tourism primarily sustain the town; however, it is estimated that 307 mining jobs would be lost by the year 2000, because of the shutdown of the Bullfrog Mine (Planning Information Corporation 1998). Public services include facilities such as a medical clinic, post office, elementary and high schools, banks, stores, restaurants, and motels. Beatty is the nearest town for Park residents living at Furnace Creek and serves as the high school for children of employees living in the Park.

3.4.3 Economy and Employment

Information on economy and employment in the region of influence is presented in Tables 1 and 2. Of the three counties, Nye County has the highest median household income, while Inyo County has the highest per capita income. Poverty levels have decreased in Esmeralda County since 1989, but increased slightly in Nye County and Inyo County.

Other than government services, Inyo County's economy is primarily focused on recreation, some mining, and ranching. However, the government (federal, state, and local) employs the most people, and provides the highest percentage of total employment and total payroll in the county. Average salaries are highest in mining, construction, transportation, communication, and utilities.

Service industries employ the most people in Nye County. Contributions by various activities to the Nye County economy are summarized in Table 7. According to the U.S. Census, the largest single employer in Nye County is the Bechtel Nevada Corporation, employing over 900 persons. However, federal facilities have also provided employment for Nye County residents and a modest amount of procurement for local business. The Nevada Test Site (NTS) has been operating in Nye County for several decades. Nye County has been subject to booms and busts because of fluctuating mining activity and the recent decline in NTS employment. In the early 1990s, nuclear testing was discontinued and employment by private government contractors declined dramatically. As of the first quarter of 1999, 1,505 people were employed at NTS, and 45 were employed at the adjacent Tonopah Test Range. Nye County's employment peaked in 1989, but declined substantially in the early 1990s. By 1997, Nye County's employment had recovered only moderately, reaching 8,648 workers, an average increase of only 100 workers per year. In 1997, approximately 15.8 percent of the workforce was employed in the mining industry, which accounted for 22.6 percent of the total payroll in the county. Over the past two decades, employment levels have increased most dramatically in the agricultural services, construction, manufacturing, and wholesale trade industries. The Nye County unemployment rate decreased from 5.1-percent in 1996 to 4.6-percent in 1999 (July-September) according to the U.S. Census. Estimates for the year 2000 (Planning Information

Corporation 1998) show Nye County's total employment at 12,380, while projected total employment will reach 15,760 by year 2008.

Esmeralda County's mining industry constitutes a crucial underpinning to the county's growth and economic wellbeing, with 45.9 percent of the county's jobs and 64.6 percent of payroll in the county attributed to the mining industry. Of all the industries in the county, the mining industry had the highest annual wage at $41,856 per worker in 1997. The unemployment rate in Esmeralda County increased to 11.5-percent in 1999 (July-September) from 7.9-percent in 1996 according to the U.S. Census.

Unemployment in the Inyo County civilian labor force was identified at a rate of 8.4 percent. Of the 285 enrolled Timbisha Shoshone members, about 114 persons (approximately 40-percent of the members) are unemployed at a rate more that five times that of Inyo County. Although more than 50 percent of the Tribe's population is in the active labor force, 25 percent only work part time. More than 80 percent of the Tribe's households fall below the 1993 poverty threshold ($13,950 for a U.S. family of four) (Vallo and Associates 1994). Tribal members work in a variety of occupations ranging from nursing to unskilled labor. Some Tribal members are employed at AmFac Inc., the Park, and the United States Postal Service.

3.4.4 Housing

Relevant information regarding housing and occupancy of housing units is provided in Table 3. In 1990, Inyo County had the greatest number of units (8,712), the lowest vacancy rate (7.9 percent), and the highest median value for housing units ($115,800). Esmeralda County had the lowest number of housing units (966), the highest vacancy rate (35.2 percent), and the lowest median value ($41,400). Nye County had the highest percentage of owner occupied units (70.2 percent).

3.4.5 Schools

Public school districts and schools in the three-county region of influence are identified in Table 4. In Inyo County, approximately 3,400 students attend school in one of the seven district or county schools. These include nine elementary schools, one middle school, and five high schools. There are also three continuation or alternative schools in Inyo County, along with one community college (Cerro Coso Community College). Esmeralda County has three elementary schools; high school students attend the Tonopah High School in Nye County. Public schools in Nye County include ten elementary, one middle school, one junior high/high school, and four high schools.

Under federal and tribal law, Native American children could be educated in tribally controlled and federally certified schools located on Native American reservations. Federal funds are available through the Indian Education Act for the education of Native American children. Compensation from the federal government is provided to any school district that has entered into a cooperative agreement with a federally recognized Tribes whether it is public, private, or a tribally controlled school. In Nye County, there is one tribally controlled elementary school, which is operated by the Duckwater Shoshone Tribe. Students from the Timbisha Shoshone Tribe residing at Furnace Creek attend public school in Furnace Creek, California, (grades K through 6) or Beatty, Nevada, (grades 7 through 12). A number of young Timbisha Shoshone Tribe members are attending colleges, and several have majored in wildlife management in the hope of finding employment in resource management positions in the Death Valley region (*Secretarial Report*).

3.4.6 Utilities and Services

Utilities in the region of influence include telephone, water, electricity, and cable. The companies providing these services in various regions of each county and within Death Valley National Park are listed in Table 5.

The key public services examined in this analysis are police services, fire protection, and health care. Providers of these services in the region of influence are police and fire departments, and hospitals and clinics, as summarized below.

Police, Fire Protection and Other Services

Police protection in the region of influence is provided by the law enforcement agencies identified on Table 5. They include local sheriff's offices, the Nevada Highway Patrol, and the California Highway Patrol. Table 5 lists fire protection and ambulance services in the region of influence, which are provided by the Lone Pine Fire Department and Nye County volunteer fire departments in Tonopah, Pahrump, and Beatty.

At Death Valley National Park, park rangers provide some law enforcement and fire protection services, but the Nye, Esmeralda, and Inyo counties and the California Highway Patrol (CHP) and Nevada Highway Patrol retain primary jurisdiction for any such incidents. The National Park Service has a cooperative understanding with the three counties (Nye, Esmeralda, and Inyo) regarding law enforcement and fire protection, under which they provide support to each other as necessary.

There is a Class II-solid waste landfill in the town of Beatty, Nye County, Nevada. The landfill primarily serves the residents of the town of Beatty. The landfill is approximately 40 miles southeast of the Scotty's Junction parcel.

Health Care

Health care in the region of influence includes full-service hospitals and several medical clinics (Table 6). These facilities provide a wide array of medical services, including physical examinations; treatment of occupational and nonoccupational illnesses; emergency, intensive, and cardiac care; coronary care; neonatal intensive care; specialists in internal medicine, optometry, facilities; infertility, obstetrics, and gynecology; inpatient and outpatient surgery; pharmaceuticals; dental care; respiratory therapy; X-ray and laboratory; and skilled-nursing and long-term care (Vallo and Associates 1994).

With regard to the Timbisha Shoshone Tribe, there is a Native American health service clinic in the town of Lone Pine. Approximately 57 percent of tribal members have no health insurance, or rely solely on the health services provided through the Indian Health Service Clinic, Medicare, Medi-Cal. Nearly 40 percent of tribal members do not receive dental care.

3.4.7 Environmental Justice

As shown in Table 1, the three counties are proportionately similar in age distribution and their racial composition is similar, the largest group being white with an age distribution between 20 to 64 years. The lowest concentration of whites is in Inyo County, at approximately 82 percent of the population, while Nye County has the highest concentration of whites at 93 percent. Native Americans represent the area's largest minority population, with the largest concentration in Inyo County at 10 percent of the total county population. The three counties are also similar in their percentage of people living in poverty, with Inyo County having the highest at 12.8 percent and Nye County having the smallest percentage at 11 percent.

~~In summary, the three counties are proportionate in terms of their racial, low income, and age compositions. Although the specific project actions are not yet definite, any attempt to estimate the potential for disproportionately high and adverse human health or environmental effects on specific population segments, would be speculative at this time. Given the close similarity of the population composition and other socioeconomic characteristics between the three counties, it is unlikely that any population or community would experience any project-related social or economic effects in a disproportionate manner.~~

3.5 LAND USE, RECREATION, AND WILDERNESS

This section identifies the existing conditions for land use and land use management for each of the lands proposed for transfer, acquisition and transfer, and cooperative activities/special uses. Information provided in this section was gathered during site visits, and from a review of background documents contributed by the National Park Service, Bureau of Land Management, United States Fish and Wildlife Service, and Timbisha Shoshone Tribe.

3.5.1 Regional Setting

Regional land use designations relevant to the proposed sites and their respective surroundings may be summarized as follows (1) wilderness, (2) military presence, and (3) nonfederal land ownership. Nonfederal land is composed of (a) state lands, (b) mining and mineral interests, (c) private lands, (d) grazing, and (e) recreation. See Map 10 for regional land use features.

Wilderness. On October 31, 1994, Congress designated approximately 3,158,033 acres (95 percent) of Death Valley National Park as wilderness.

Military Presence. The region surrounding the proposed sites includes a strong military presence. China Lake Naval Air Weapons Station is located in the Mojave Desert, west of Death Valley National Park; Nellis Air Force Range is located northeast of the Park; and Fort Irwin Military Reservation is south of the Park. Map 10 provides an overview of the military presence surrounding the proposed sites.

Nonfederal Land Ownership. There are approximately 53,990 acres of nonfederal lands within the boundaries of Death Valley National Park. Of the nonfederal land, 41,340 acres are owned by the State of California and 12,650 acres are owned by private parties.

State Lands. The Statehood Act of 1850 granted to the State of California all unappropriated and surveyed land in sections 16 and 36 in Death Valley, including those in the area later included in the Park. In 1998, 12,872 acres of state land were acquired by exchanges. Eighty-two parcels of various sizes remained in the hands of the state as of June 1998, totaling 41,340 acres.

Mining and Mineral Interests. About 90 percent of private lands in Death Valley are patented mining claims. There are 186 patented mining claims or land parcels with reserved mineral rights totalling 12,270 acres. There are approximately 338 unpatented mining claims within the Park totaling an estimated 5,840 acres. Many of these claims have had historic mining activity. The number of unpatented mining claims fluctuates as owners stop filing required annual notices or stop paying annual maintenance fees, which are due by August 31 each year to retain an ownership interest in the claim.

Private Lands. Private lands exist within the region surrounding the lands considered in this LEIS. In the Furnace Creek area, AmFac Inc. owns the Furnace Creek Inn and Furnace Creek Ranch resorts totalling 340 acres. Also, several private lands, with grazing or mining interests are located in Amargosa Valley, Saline Valley, Panamint Springs, Argus Range, Jackass Flat, Funeral Mountains, and Goler Canyon.

Grazing. Grazing began in the late 1800s and was first regulated in 1935 with the establishment of the Mojave Grazing District under the Taylor Grazing Act of 1934. Between 1935 and the establishment of the BLM (1946), livestock grazing was managed by the U.S. Taylor Grazing Service. Since the passage of that law, grazing management has been administered by BLM. The public rangelands established under the Taylor Grazing Act include all unfenced lands, public and private, within allotment boundaries.

In the early 1900s, ranches, farms, and homesteads were prevalent in areas throughout the Mojave Desert. Dry farming was practiced in these areas, which at times led to water rights conflicts.

Cattle have grazed in California's northern and eastern Mojave desert for well over 100 years. Much of the desert had been heavily grazed at various times between 1900 and 1940. Both the acreage and the intensity of livestock use on federal land in the California desert declined during the 20th century. This decline may be due to a decrease in demand for beef, stricter controls by the land management agencies, more efficient and cost-effective methods of raising beef at other locations, and a decrease in forage production. Also, the rapid expansion of the feral burro population since its protection under the Wild and Free-Roaming Horse and Burro Act of 1971 has resulted in conflicts over forage in some areas (BLM 1980). From the 1900s to the 1950s, livestock numbers steadily declined reflecting deterioration of the quality and quantity of forage resources. After the 1950s, cattle and sheep numbers continued to decline.

With the passage of the California Desert Protection Act of 1994, Death Valley National Park acquired a portion of four BLM grazing allotments: Eureka Valley, Last Chance, Hunter Mountain, and Lacey-Cactus-McCloud.

The grazing lease on the Magruder Allotment, which includes both the Lida Community parcel and Scotty's Junction parcel, has been revoked. At the present time there is no authorized grazing in these areas.

Recreation. Death Valley National Park and the Mojave Desert in general are popular recreational areas. Death Valley is world renowned for its exposed, complex, and diverse geology, and for its unusual geologic features, providing a natural geologic museum representing a substantial portion of the earth's history. The extremely colorful, complex, and highly visible geology and steep, rugged mountains and canyons provide some of the most dramatic visual landscapes of any location in the United States. Death Valley contains five major sand dune systems representing all types of dune structures, making it one of the only places on earth where this variety of dune types occurs in such close proximity. It also contains the highest dunes in California, the Eureka Sand Dunes. Death Valley contains an unusually high number of well-preserved archeological sites, including rock art associated with ancestors of contemporary Native American communities. Built in a remote, isolated desert location in the early 1900's, Scotty's Castle, with its architectural style, quality, and priceless collection of antiques and art objects, is an attraction that has immense public appeal.

Public lands managed by BLM are also an important link to the region's diverse natural and cultural landscape and provided additional opportunities for recreational activities. These wildlands mark the transition between the Mojave and the Sierra Nevada, Great Basin, and San Joaquin Valley bioregions. The wide variety of landscapes in this region support rich biodiversity and nationally significant, arid wildland recreation resources. Segments of 19 distinct mountain ranges are located here, with the highest elevation reaching over 11,000 feet above sea level. Other landforms such as tufa towers, badlands, deep canyons, lava flows, dry lakes, sand dunes, cinder cones, wide valleys, and alluvial fans provide a varied setting for desert exploration, discovery, and solitude.

3.5.2 Site-Specific Land Use Practices

The following describes land use designations and land use management practices occurring on lands proposed for transfer, acquisition and transfer, and cooperative activities/special uses. See Map 10 for a description of Regional Land Use Features.

3.5.2.1 National Park Service

3.5.2.1.1 Land Transfer in Trust

Furnace Creek

The Furnace Creek area is not designated as a wilderness area. The Furnace Creek Wash area is visible to visitors entering Death Valley from the east on State Route 190. This is the most heavily used access into Death Valley National Park. Except for partially reclaimed dumps of the Boraxo Mine (open pit) and the headframe area of the Billie Mine (just outside park boundaries), the view of the Furnace Creek area from State Route 190 is relatively free from alteration by human activities. Undisturbed vistas of the broad wash and colorful surrounding mountains offer visitors an imposing visual introduction to Death Valley. Dante's View is a popular vista visited by tourists from around the world.

The eroded badlands, adjacent to State Route 190, present a colorful vista for visitors entering the Park along this corridor. Zabriskie Point, bordered on the south, north, and west by patented U.S. Borax claims, is one of the most visited and scenic points in the Park.

Features of historical significance in the upper Furnace Creek area include the Ryan Mines and Railroad Grade (outside the park), which served the mines until the 1920s, and a few trash heaps and a gypsum wall of unknown origin adjacent to a gypsum outcrop on the Park's east boundary, 2.5 miles south of State Route 190.

The Furnace Creek community is an area of four square miles, which includes a cluster of buildings and facilities near the mouth of Furnace Creek Wash. Furnace Creek is the operational center of Death Valley National Park. At Furnace Creek, the Timbisha Shoshone Tribe maintains a Tribal Center and several residences. Adjacent to Furnace Creek Ranch, the National Park Service operates the Park Headquarters. In addition, a decades-old date farm still produces a cash crop of Deglet Noor dates from approximately 2,200 palms.

Furnace Creek also offers the Park's largest collection of services: accommodations (from tent sites to luxurious suites), restaurants (fast-food to fine dining), stores (groceries, gifts, essentials), sports (swimming, horseback riding, golf), an airport, a full-service gas station, and two museums. The Furnace Creek Inn and Ranch are privately owned in-holdings surrounded by the Park.

3.5.2.1.2 Proposed Authorization of Private Land Acquisition

Indian Rancheria

~~Presently, these parcels are privately owned and are at the western edge of Death Valley National Park boundaries. Recreation is the predominant activity in the immediate area of the private parcels.~~ Indian Rancheria is composed of two, 80-acre parcels; one parcel is held privately and the other parcel is held in trust by the BIA as a public allotment. The parcels are in the vicinity of several privately held parcels, which are within Death Valley National Park boundaries in western Saline Valley. There are several dwellings and semi-permanent improvements such as trailers, cabanas, and storage areas.

3.5.2.1.3 Tribal Cooperative Activity/Special Use Areas

Furnace Creek—Tribal Mesquite Use Area, and Buffer Area

The Furnace Creek—Tribal Mesquite Use and Buffer Areas proposed for tribal access and use pursuant to a cooperative agreement with NPS are designated as Death Valley National Park Wilderness. The buffer area separates the tribal area from Park visitors and also serves to protect archeological sites. It will be an area restricted to visitors pursuant to a cooperative agreement to be negotiated between the Tribe and the National Park Service.

Timbisha Shoshone Natural and Cultural Preservation Area

Hunter Mountain

The Hunter Mountain area proposed for tribal access and use pursuant to a cooperative agreement with NPS is designated as Death Valley National Park Wilderness. The predominant activity within the immediate area is recreation.

Wildrose

The Wildrose area proposed for tribal access and use pursuant to a cooperative agreement with NPS is designated as Death Valley National Park Wilderness. Historically, this area was a summer village site for the Timbisha Shoshone Tribe.

Saline Valley Warm Springs

Saline Valley Warm Springs is located within the Death Valley National Park boundaries and is a popular recreational area. ~~As stated above, the private parcels known as Indian Rancheria are located approximately six miles west of the Saline Valley Springs.~~

Other Special Use Areas

Mesquite Springs

Mesquite Springs is designated as Death Valley National Park Wilderness and is located in the northeastern part of the Park. Historically, this was a winter village site and was important for waterfowl, food plants, and mesquite.

Daylight Pass

Daylight Pass is designated as Death Valley Wilderness. It is on a main Northeast route into the Park from the town of Beatty, Nevada. The pass is more than 4,000 feet above mean sea level in elevation, and provides spectacular views of Death Valley. Daylight Pass was a historical route from the Beatty area used by tribal members to enter Death Valley to collect pinyon nuts and salt. A regular overnight camp was located along the route near Hole-in-Rock Spring.

3.5.2.2 Bureau of Land Management

3.5.2.2.1 Land Transfers in Trust

Death Valley Junction

The Death Valley Junction parcel is within BLM jurisdiction, with a limited-use classification. See Table 8 for CDCA classifications. The areas contiguous with the northwest and southeast boundaries of the parcel, are designated as BLM Wilderness with moderate-use classifications. The parcel lies on the eastern edge of an alluvial fan sloping gently to the east. It is at the junction of State Routes 127 and 190, the latter being a main entrance road into the Park. The Death Valley Junction parcel is near a section of state land located to the west, and is bounded on the east by private land. The parcel contains no mining claims and is within the Chicago Valley Wild Horse Herd Management Area.

Centennial

The Centennial parcel is within BLM jurisdiction and ~~designated~~ classified as ~~BLM Wilderness~~ multiple-use~~-~~. Contiguous areas northeast and east of the site are designated as BLM moderate- and limited-use classifications. State Route 190 runs to the north and China Lake Naval Air Weapons Station lies to the south.

Scotty's Junction

The Scotty's Junction parcel is within BLM jurisdiction and designated as a multiple-use classification. Scotty's Junction is located east of the Park in Nye County, Nevada, near the junction of U.S. Highway 95 and State Route 267. The land parcel is west of U.S. Highway 95. There are no mining claims on the parcel. The parcel is within a grazing allotment, however, the grazing lease has been revoked.

Lida Community Parcel

The proposed action calls for the transfer of approximately 2,800 acres to be held in trust for the Tribe. The site is within BLM jurisdiction and designated as a multiple-use classification. The parcel is adjacent to Lida Ranch and the historic town of Lida, which continues to have a few residents. Activities in the area include modest ranching and mining. The parcel is within a grazing allotment; however, the grazing lease has been cancelled, and currently there is no authorized grazing.

3.5.2.2.2 Proposed Authorization of Private Land Acquisition

Lida Ranch

The Lida Ranch parcel is privately owned. As stated above, the parcel is adjacent to Lida Community Parcel and the historic town of Lida, which continues to have a few residents. Activities in the area include modest ranching and mining.

3.5.2.2.3 Tribal Cooperative Activity/Special Use Areas

Eagle Mountain and Warm Sulphur Springs

Eagle Mountain and Warm Sulphur Springs are proposed for tribal access and use pursuant to cooperative agreements with BLM and are designated as BLM Wilderness. Both sites are just outside the Death Valley National Park boundaries and are approximately 640 acres in size. Eagle Mountain is bounded on the west by State Route 127 and is adjacent to the Amargosa River drainage. Warm Sulphur Springs has been designated an Area of Critical Environmental Concern to protect the desert marsh habitat, which includes the marsh and the surrounding mesquite.

Lida Tribal Use Area

The Lida Tribal Use Area proposed for tribal access and use pursuant to a cooperative agreement with BLM is designated as a BLM multiple-use classification. The area is approximately 44,800 acres in size. Magruder Mountain, which anchors the southern portion of the area, is a well-used recreational area and also supports mining and ranching. Hunting for upland game birds, deer, and mountain lions is a popular activity, as is harvesting firewood and cutting Christmas trees.

3.5.2.3 U.S. Fish and Wildlife Service

3.5.2.3.1 Tribal Cooperative Activity Area

Ash Meadows National Wildlife Refuge, Nevada

The Ash Meadows National Wildlife Refuge proposed for tribal access and use pursuant to a cooperative agreement with USFWS is designated as a National Wildlife Refuge. Ash Meadows National Wildlife Refuge, established in 1987, is located in the Amargosa Desert slightly north of the California-Nevada border off Nevada State Route 373. This desert oasis has a great diversity of species and is critically important to several endangered species, including the Ash Meadows pupfish.

3.6 VEGETATION

This section provides descriptions for existing flora and habitat (plant community) for lands proposed for transfer, acquisition and transfer, and cooperative activities/special uses. Potentially affected vegetation in each of the subject areas was characterized following review of available documents, California Natural Diversity Database (CNDDB) and Nevada Natural Heritage Program (NNHP) research, input from agency staff at BLM, NPS, and USFWS, and site reconnaissance surveys on January 18 through 21 and February 23 and 24, 2000.

3.6.1 Regional Setting

3.6.1.1 Flora

The land transfer parcels occur in two physiographic regions differentiated by elevation, latitude, and dominant vegetation. These two regions include the Mojave Desert and the Great Basin geomorphic provinces (Barbour 1988).

The Mojave Desert is located in the rain shadow of the southern Sierra Nevada and Transverse Ranges of California. The Mojave Desert is bordered by the Great Basin Desert to the north and east and to the south by the Sonoran Desert. The region consists of relatively flat basins separated by mountain ranges. Elevations in the basins range from 1,000 to 3,300 feet above mean sea level. With notable exceptions, elevations in the mountain ranges rarely exceed 7,000 feet above mean sea level. Many of the basins contained extensive freshwater lakes during the Pleistocene period. The remaining dry lakebeds are often rich in mineral salts.

The Great Basin geomorphic province is an extensive area that occupies much of Utah, Nevada, and Idaho and extends into adjacent states and Canada. The area consists of extensive basins (valleys) interrupted by north-south trending mountain ranges. The province is in the rain shadow of the Sierra Nevada-Cascade Range axis. Elevations in the basins range from a few thousand feet to over 6,000 feet above mean sea level. Mountain ranges include several peaks over 9,000 feet, the highest point in the vicinity of the parcel being White Mountain at over 14,000 feet. The Great Basin is characterized by having interior drainage patterns as described for the Mojave, with many of the basins showing evidence of being occupied by Pleistocene period lakes.

Vegetation in the region is dominated by low-growing shrub species with morphological and physiological adaptations to survive prolonged periods of drought and high temperatures. In the Mojave, a significant portion of the flora is contributed by ephemeral (annual) species that evade drought conditions by passing the summer and fall seasons in the form of seed until suitable conditions for germination, growth, and reproduction arise.

3.6.1.2 Plant Communities

Regional vegetation is influenced by topography, soil composition, soil chemistry, and available moisture. The various plant communities occur differentially depending on elevation, latitude, substrate, aspect, and soil alkalinity. Plant communities described in this LEIS generally conform to *Preliminary Descriptions of the Natural Communities of California* (Holland 1986).

Plant communities follow a roughly zonal pattern related to soils, elevation, and latitude. Plant communities approximate bands around basins and upslope onto mountain ranges. Elevationally from alkaline basins to upper mountain slopes (low to high), major plant community types include desert alkali sink scrub, desert saltbush scrub, shadscale scrub, Mojave creosote bush scrub, blackbrush scrub, Joshua

tree woodland, and ~~piñon~~pinyon-juniper woodland. Much of the Mojave Desert is vegetated by these community types.

Plant communities are often named after the dominant shrub or tree species. In the Mojave Desert and Great Basin provinces which occupy the Timbisha Shoshone ancestral homeland, plant communities are generally distributed in relation to the relative alkalinity and salt content of the soils, as well as elevation. Desert sink and saltbush scrub are dominated by saltbush, which consists of various species of the genus *Atriplex* and usually occur on soils with a high alkalinity and salt content. Shadscale scrub is dominated by shadscale (*Atriplex confertifolia*) and generally occurs in areas with intermediate salt and alkalinity. Creosote bush (*Larrea tridentata*) and blackbrush (*Coleogyne ramosissima*) dominate their named community type and occur in less alkaline soils. The higher mountain ranges often support open forests dominated by pinyon pine (*Pinus monophylla*) and juniper (*Juniperus osteosperma* and *J. californica*) with an understory of shrub species more typical of big sagebrush (*Artemisia tridentata*) dominated scrub associations of plants. In the Great Basin, similar elevational placement of plant communities can be identified. Low alkaline areas are generally vegetated by saltbush scrub that gives way to big sagebrush scrub and finally pinyon pine and juniper woodland. The lands considered for transfer, acquisition and transfer, or cooperative activities/special uses in this LEIS occur in an area that represents the transition zone between Great Basin Desert plant communities and Mojave Desert plant communities. Regional plant communities include major elements of plant species associated with both the Mojave and Great Basin Desert provinces.

Areas with available water such as perennial surface and subsurface stream courses and various springs and seeps provide habitat for riparian species. Characteristic desert riparian plant communities include Mojave riparian forest, Modoc-Great Basin riparian scrub, transmontane alkaline marsh, arroweed scrub, and tamarisk scrub.

Mojave riparian forest generally occurs along larger desert rivers in fine-grained, sub-irrigated alluvial soils. This community forms a relatively open broad-leaved winter-deciduous, streamside forest dominated by Fremont cottonwood (*Populus fremontii*) and red willow (*Salix laevigata*) with a shrubby understory of rabbit brush (*Chrysothamnus* spp.), narrow-leaved willow (*Salix exigua*), shadscale, and greasewood (*Sarcobatus vermiculatus*).

Modoc-Great Basin riparian scrub occurs along watercourses in the Great Basin Desert south into Inyo County. This community is characterized by open to impenetrable thickets of broad-leaved deciduous thickets dominated by willow species (*Salix* sp.) with often dense understories of rushes (*Juncus* spp.), sedges (*Carex* spp.), and often saltgrass (*Distichlis spicata*).

Transmontane alkaline marsh occurs in moist lake beds, spring margins, and river bottoms sporadically throughout the region at elevations between 3,000 to 7,000 feet above mean sea level. This community generally occurs where there is standing water or saturated soil present for most of the year. High evaporation and low water input render these areas highly saline especially during the summer. Plant species characteristic of this community include sedges and rushes, reed grass (*Phragmites australis*), saltgrass, sea-blite (*Suaeda* spp.), nitrophila (*Nitrophila* spp.), and iodine bush (*Allenrolfea occidentalis*).

Arroweed scrub forms open to dense thickets along intermittent and sub-irrigated streams and dry lakebeds. This is a disturbance adapted community (ruderal) that is increasing in extent at the expense of other riparian forest and scrub types because of grazing and groundwater pumping. These thickets are dominated by arroweed (*Pluchea sericea*) with additional species occurring at the margins including saltgrass and various sedges and rushes.

Tamarisk scrub is a virtual monoculture of several tamarisk species (*Tamarix chilensis T. aphylla, T. ramosissima* and others) with an understory of quailbush (*Atriplex lentiformis*), arroweed and narrow-leaved willow. This community occurs along sandy or gravelly sub-irrigated or intermittent channels where there is high evaporation. Generally this community will quickly colonize disturbed areas and supplant native vegetation. Tamarisk scrub is increasing in range and now occurs in scattered locations from the rain shadow of the North Coast Ranges in California east and south across the Mojave Great Basin and Sonoran deserts.

3.6.1.3 Methodology

Field surveys were conducted on January 18 through 21 and February 23 and 24, 2000, to characterize plant communities and associated flora. Field investigators conducted site reconnaissance surveys, compiled (seasonally limited) inventories of observed plant species, and evaluated habitats for the potential to support special-status plant species. Plant species identified in the areas subject to the Proposed Action are listed in Table 9. Sensitive plant species possibly occurring at specific locations within the identified lands considered in this LEIS are discussed in Section 3.6.3, "Special-Status Plant Species" and summarized in Table 10.

Vegetation was characterized by walking through representative portions and inventorying observed species. Plants were identified following nomenclature in the *Jepson Manual Higher Plants of California* (Hickman, Ed. 1993), *A California Flora and Supplement* (Munz 1968), and various other florae and field guides (Munz 1974; Abrams 1976; Ferris 1981; Jaeger 1969; Niehaus 1976; and Hitchcock 1971).

3.6.2 Site-Specific Plant Community Descriptions

3.6.2.1 National Park Service

3.6.2.1.1 Land Transfer in Trust

Furnace Creek

The Furnace Creek parcel consists of a community development area and an adobe restoration area. Plant communities on the parcel include landscaped, saltbush scrub, and desert sink scrub. The Community Development parcel is situated on an alluvial fan formed by Furnace Creek and is sparsely vegetated by saltbush scrub. The existing housing area (Timbisha Shoshone village) supports ruderal (disturbance adapted) vegetation and landscape species. The Community Development parcel Buffer Area is located on a 25-acre strip north and east of the community development area between Furnace Creek Ranch and the existing Timbisha Shoshone village. A second buffer area of 3,000 acres is located south and east between State Route 178 and the development area. The buffer areas are sparsely vegetated with saltbush scrub. The Tribal Mesquite Use Area is located west and south of the Community Development parcel. The Tribal Mesquite Use Area is vegetated by saltbush scrub and sandy hummocks supporting honey mesquite (*Prosopis glandulosa torreyana*). This area grades into desert sink scrub toward the floor of Death Valley. These communities are further described below.

Saltbush Scrub. This community occurs in the Community Development Area and buffer areas at the foot of the Black Mountains to the east. This community onsite is characterized by very low vegetative cover (5 percent to 10 percent absolute cover). Dominant shrub species observed include desert holly (*Atriplex hymenelytra*), allscale (*Atriplex polycarpa*), and honeysweet (*Tidestromia oblongifolia*) with dried remains of annual and perennial herbaceous species such as desert sunflower (*Geraea canescens*), gravel ghost (*Atrichoseris platyphylla*), spiny herb (*Chorizanthe rigida*), and Parish's chamaesyce (*Chamaesyce parishii*).

Landscaped. This community occurs in the existing housing area. Dominant vegetation consists of planted trees and perennials. Species observed include California fan palm (*Washingtonia filifera*), date palm (*Phoenix dactylifera*), tamarisk (*Tamarisk ramosissima, T. aphylla*), and giant reed (*Arundo donax*).

Desert Sink Scrub. This community occurs in the Tribal Mesquite Use Area. Soils in this area are characterized by being very fine textured with visible salt deposits in the surface crust. On the parcel vegetation generally occurs in widely separated and often elevated hummocks. Dominant species include honey mesquite, fourwing saltbush (*Atriplex canescens*), allscale, alkali sea-blite (*Suaeda moquinii*), arroweed, and salt grass.

No special-status plant species were observed or have been recorded on lands at Furnace Creek considered in this LEIS. Potentially occurring special-status plant species are listed in Table 10.

3.6.2.1.2 Proposed Authorization of Private Land Acquisition

Indian Rancheria

Detailed surveys of the parcels known as Indian Rancheria were not conducted because the parcels are privately owned. The description below is based upon observations of the general area west of the salt lake, near the base of the Inyo Mountains. Major geographic features include the Inyo Mountains west of the Indian Rancheria parcels, the alluvial fan of the Inyos, and the floor of Saline Valley toward the east. The dunes are north and west of the Indian Rancheria parcels.

Vegetation in the vicinity of the Indian Rancheria parcels trends from Mojave creosote bush scrub in upper elevation to saltbush scrub and mesquite groves at the lower elevation. This community occurs on the alluvial fan of the Inyo Mountains which trends into the valley floor of Saline Valley. The creosote bush scrub association is relatively low cover, dominated by creosote bush, shadscale, and allscale. North of the road that transects the parcel, creosote scrub transitions into a sparse saltbush scrub community. At the base of the alluvial fan the vegetation transitions into open areas of mud/salt Flat occurring on finer texture soils of the valley bottom. Dominant vegetation includes salt grass (*Distichlis spicata*), arrow weed (*Pluchea sericea*), and occasional saltbush species (*Atriplex spp.*). Trending north and east from the road, occasional mesquite groves (bosques) occur, with patches of arrow weed and iodine bush (*Allenrolfea occidentalis*) in open areas.

~~Vegetation in the region of the Indian Rancheria parcels is dominated by piñon-juniper woodland at higher elevations transitioning into Mojave creosote bush, shadscale, and desert sink scrub. A patch of transmontane alkaline marsh occurs in the west-central portion of the valley dominated by mesquite bosques, arroweed, and willow species.~~

~~**Mojave Creosote Bush Scrub.** Mojave creosote bush scrub occurs in Saline Valley on mountain slopes, alluvial fans, terraces, bajadas, and the valley floor generally topographically above saltbush scrub and desert sink scrub. This community is dominated by creosote bush, burro-weed (*Ambrosia dumosa*), and~~

~~various saltbush species including desert holly, shadscale (*Atriplex confertifolia*), allscale, and fourwing saltbush.~~

~~**Ruderal.** This community occurs in disturbed areas adjacent to the springs. Vegetation is sparse in this area likely as a result of concentrated mineral deposits in surrounding soils and human activity. This community is composed of species typical of the region including alkali sea-blite, Russian thistle (*Salsola tragus*), tansy mustard (*Descurainia* sp.), and other disturbance-adapted species.~~

~~Special-status plant species potentially occurring at Indian Rancheria are listed in Table 10 and discussed in Section 3.6.3, "Special-Status Plant Species."~~

3.6.2.1.3 Tribal Cooperative Activity/Special Use Areas

Furnace Creek—Tribal Mesquite Use Area and Buffer Area

Plant communities in the areas of the two buffer zones and the Tribal Mesquite Use Area include ruderal, saltbush scrub, and desert sink scrub. These communities are described in Section 3.6.2.1.1, "Land Transfer in Trust, Furnace Creek."

Timbisha Shoshone Natural and Cultural Preservation Area

Hunter Mountain

Detailed surveys of plant communities were not conducted at the Hunter Mountain Special Use Area because no specific boundary to the area subject to cooperative activities/special uses was identified in the *Secretarial Report*. Use areas and details of cooperative activities will be developed at a later date. A general description of plant communities in and around Hunter Mountain is provided below.

Hunter Mountain supports mixed woodlands consisting of pinyon pine and juniper woodland grading with Joshua tree (*Yucca brevifolia*) woodland. These woodland communities have a complex understory composed of both Great Basin and Mojave Desert shrub species such as antelope bush, big sagebrush, blackbrush, budsage (*Artemisia spinescens*), hopsage (*Grayia spinosa*), burro-weed, and greasewood, along with various species of rabbitbrush and saltbush.

Grapevine Canyon is a major drainage in the area and supports a well-developed riparian community in the canyon bottom adjacent to the channel. Dominant species include Fremont cottonwood, red willow, narrow-leaved willow, desert wild grape (*Vitis girdiana*), rabbitbrush, saltgrass, and various species of sedges and rushes.

Wildrose

At Wildrose Canyon the ranger station is surrounded by remnants of a creosote bush scrub plant community and ruderal plant assemblages in marginal areas.

Areas above the Wildrose ranger station transition from creosote bush scrub into pinyon-juniper woodland. Species composition of the woodland at this location is consistent with that of pinyon-juniper woodland dominated by pinyon pine and Utah juniper in the tree canopy. Shrubs such as antelope bush, big sagebrush, rabbitbrush, nevada ephedra (*Ephedra nevadensis*), green ephedra (*Ephedra viridis*), and California buckwheat (*Eriogonum fasciculatum polifolium*) commonly occur in the understory.

Detailed surveys of plant communities were not conducted at Wildrose. Proposed development would occur within already developed areas, and traditional uses would not involve any permanent alterations to plant communities. Focused surveys for special-status plant species were not conducted at this location, although none are known to occur at the Wildrose ranger station.

Saline Valley Warm Springs

~~For a description of local plant communities of Saline Valley Springs, see Section 3.6.2.1.2, "Proposed Authorization of Private Land Acquisition, Indian Rancheria."~~
Vegetation at the springs (Palm Spring, lower Warm Spring) is dominated by mesquite (*Prosopis glandulosa torreyana*). Willows (*Salix exigua*) occur within and at the margin of the springs. Marshy areas exist around the periphery of some springs. These areas support several species of rushes and sedges with occasional stands of giant reed (*Phragmites australis*). Introduced exotic vegetation, including palms (*Phoenix dactylifera*) and tamarisk (*Tamarix ramosissima*), are common around the springs.

Other Special Use Areas

Mesquite Springs

Detailed surveys of plant communities at Mesquite Springs Special Use Area were not conducted because no specific boundary was identified in the *Secretarial Report*. Low-impact economic development was identified as possibly occurring at this site or at Daylight Pass (described below). It is anticipated that an information booth or similar small-scale activity would be sited in the existing developed area of Mesquite Springs campground. A general description of plant communities in and around Mesquite Springs is provided below.

Mesquite Springs Campground surrounds the springs on three sides and supports only remnants of natural plant communities. The spring area is vegetated with a riparian association consisting of honey mesquite, screwbean mesquite (*Prosopis pubescens*), Fremont cottonwood (*Populus fremontii*), narrow-leaved willow (*Salix exigua*), threesquare (*Scirpus americanus*), and arroweed.

Upland areas in and surrounding the campground are vegetated with plant species typical of Mojave creosote bush scrub. Dominant shrub species observed include creosote, burro-weed, burrobrush (*Hymenoclea salsola*), desert holly, fourwing saltbush, and allscale.

Because no specific permanent development is proposed at Mesquite Springs, no evaluation of potentially occurring special-status species was conducted.

Daylight Pass

Detailed surveys of plant communities at Daylight Pass Special Use Area were not conducted because no specific boundary was identified in the *Secretarial Report*. A general description of plant communities in and around Daylight Pass is provided below.

Daylight Pass is located at approximately 4,300 feet above mean sea level elevation. Vegetation in this location is predominantly Mojave creosote bush scrub with a compliment of Great Basin species. Dominant shrub species typical in these types of communities includes creosote, burro-weed, burrobrush, desert holly, greasewood, hopsage, fourwing saltbush, and allscale.

3.6.2.2 Bureau of Land Management

3.6.2.2.1 Land Transfers in Trust

Death Valley Junction

Vegetation in this area is transitional between Mojave creosote bush scrub and shadscale scrub. Scattered hummocks of honey mesquite occur adjacent to State Route 127. The remains (foundations) of an old developed site approximately ½ mile from the junction are delineated by tamarisk trees.

Shadscale Scrub. Vegetation is best characterized as shadscale scrub with scattered creosote bushes occurring in the northwest corner of the parcel. Dominant shrub species observed include shadscale, allscale, fourwing saltbush, burro-weed, and alkali sea-blite. Annual and perennial herbaceous species observed included spiny herb, tansy mustard, shredding evening primrose (*Camassonia boothii condensata*), and Russian thistle.

No special-status plant species were observed or have been recorded on Death Valley Junction land considered in this LEIS. Potentially occurring special-status plant species are listed in Table 10.

Centennial

The dominant plant community in the Centennial area is Joshua tree woodland with a Mojave mixed woody scrub understory. Joshua tree woodland is relatively dense in the southern portion of this parcel, becoming sparser toward the northern and northeastern border approaching the valley floor.

Joshua Tree Woodland with Mixed Mojave Woody Scrub. Joshua tree woodland typically occurs on well-drained alluvial slopes in transitional locations between the Great Basin Desert and the Mojave Desert. Dominant species observed include scattered Joshua tree with a shrubby understory of greasewood, budsage, hopsage, Nevada ephedra, California buckwheat, spiny mendora (*Mendora spinescens*), and bladder sage (*Salazaria mexicana*). Perennial and annual species observed in the understory include apricot mallow (*Sphaeralcea ambigua*), Panamint prince's plume (*Stanleya elata*), desert alyssum (*Lepidium fremontii*), galleta grass (*Pleuraphis jamesii*), and Indian ricegrass (*Achnatherum hymenoides*). Washes in the study area present a slightly different compliment of species including burrobrush, Cooper's box-thorn (*Lycium cooperi*), broom snakeweed, black-stem, and fourwing saltbush. Black springs, approximately 2 miles south of the identified boundaries for lands proposed for transfer, supports riparian species such as narrow-leaved willow and tamarisk.

No special-status plant species were observed or have been recorded on the lands at Lower Centennial Flat considered in this LEIS. Potentially occurring special-status plant species are listed in Table 10.

Scotty's Junction

Vegetation in this area is transitional between Mojave creosote bush scrub and saltbush scrub. The parcel is best characterized as shadscale scrub with scattered creosote bush occurring in the northwest corner of the parcel.

Shadscale Scrub. Dominant plant species observed include shadscale, greasewood, green molly (*Suaeda americana*), allscale, fourwing saltbush, burro-weed, creosote bush, and alkali sea-blite with an herbaceous component that included spiny herb, desert prince's plume, desert alyssum, tansy mustard, shredding evening primrose, and Russian thistle. The parcel is crossed by several shallow ephemeral drainages with associated characteristic plant species. Vegetation associated with these drainages includes

blackstem (*Chrysothamnus paniculatus*), broom snakeweed (*Gutierrezia sarothrae*), and burrobrush. The average annual production (air dry weight) is at or below 200 pounds per acre in normal precipitation years. These soils do not support a substantial grass component and do not provide forage for livestock.

No special-status plant species were observed or have been recorded on the lands at Scotty's Junction considered in this LEIS. Potentially occurring special-status plant species are listed in Table 10.

Lida Community Parcel

At Lida Community parcel, vegetation trends east to west from big sagebrush scrub to scattered Joshua tree and piñon-juniper woodland. The topography varies between relatively flat valley associated with developed portions of Lida Ranch to steep hilly terrain in the BLM parcel. Plant communities most closely conform to big sagebrush scrub and pinyon-juniper woodland. Ruderal plant communities occur in disturbed areas associated with developed areas of Lida Ranch. Several springs support scrub riparian habitat. These communities are further described below.

Big Sagebrush Scrub. Sagebrush communities are the most common plant communities in the Great Basin Desert. Characteristic shrubs include big sagebrush, antelope bush (*Purshia tridentata glandulosa*), various species of rabbitbrush, desert peach (*Prunus andersonii*), and gray horsebush (*Tetradymia canescens*), with grasses occurring in openings between shrubs such as Indian ricegrass, galleta grass, needlegrass (*Achnatherum* and *Nassella* spp.), and cheat grass (*Bromus tectorum*). This community dominates vegetation on the eastern side of the area and occurs as an understory in pinyon-juniper woodland along the western and northern edge at higher elevations. The average annual production (air dry weight) is between 400 and 500 pounds per acre. Big sagebrush is the dominant plant making up 80 or 90 percent of the total production. Grass normally makes up to 5 to 15 percent of the vegetation. Currently, grass is less common due to livestock grazing.

Great Basin Pinyon-Juniper Woodland. This community occupies the western and northern portion of the study parcel. Single leaf pinyon pine and Utah juniper are the dominant tree species. Pinyon juniper woodland covers approximately one-third of the Lida Community parcel. Shrubs such as antelope bush, big sagebrush, mountain sagebrush (*artemisia tridentata vaseyana*), rabbitbrush, Nevada ephedra, green ephedra, and California buckwheat occur in the understory. Perennial and annual herbaceous species observed in this community include desert prince's plume (*Stanleya pinnata*), Inyo beard tongue (*Penstemon floridus*), bird's nest buckwheat (*Eriogonum nidularium*), thick-stem wild cabbage (*Caulanthus crassicaulis*), cheat grass, Indian ricegrass, and tansy mustard. The average annual production (air dry weight) is between 50 and 300 pounds per acre depending on the density of the pinyon-juniper overstory. Grass can make up 5 to 30 percent of the understory vegetation.

Ruderal. This community occurs in the ranch corral and surrounding developed areas at the Lida Ranch parcels. These areas are typically vegetated by species common in disturbed Great Basin habitat, such as rabbitbrush, cheat grass, big sagebrush, and tansy mustard.

Riparian. This community occurs adjacent to springs and is dominated by narrow-leaved willow, rabbitbrush, big sagebrush, cattail (*Typha angustifolia*), rushes, and sedges.

No special-status plant species were observed or have been recorded on the lands considered in this LEIS at Lida Ranch, Lida Community parcel, and the Lida Tribal Use Area. Potentially occurring special-status plant species are listed in Table 10.

3.6.2.2.2 Proposed Authorization of Private Land Acquisition

Lida Ranch

For a description of vegetation pertinent to the Lida Ranch parcels see Section 3.6.2.2.1, "Land Transfers in Trust, Lida Community Parcel."

3.6.2.2.3 Tribal Cooperative Activity/Special Use Areas

Eagle Mountain and Warm Sulphur Springs

Eagle Mountain is 3,806 feet above mean sea level in elevation and vegetation grades from Creosote bush scrub on the mountain slopes to shadscale scrub at the base. Commonly observed species in creosote bush scrub include creosote, burro-weed, shadscale, fourwing saltbush, and burrobrush. Commonly observed species in shadscale scrub include shadscale, fourwing saltbush, and allscale. Potentially occurring special-status plant species are identified in Table 10.

Plant communities associated with Warm Sulfur Springs include creosote bush scrub, Mojave riparian scrub, and alkaline marsh. Riparian and marsh habitats in the region typically are dominated by mesquite, tamarisk, arroweed, alkaline sea-blite, saltgrass, iodine bush, and various sedges and rushes.

Potentially occurring special-status plant species are listed in Table 10.

Lida Tribal Use Area

For a description of vegetation pertinent to the Lida Tribal Use Area see Section 3.6.2.2.1, "Land Transfers in Trust, Lida Community Parcel."

3.6.2.3 U.S Fish and Wildlife Service

3.6.2.3.1 Tribal Cooperative Activity Area

Ash Meadows National Wildlife Refuge

The Ash Meadows National Wildlife Refuge is particularly significant as it encompasses approximately 22,000 acres of spring-fed wetlands and alkaline desert uplands. Detailed surveys of plant communities at Ash Meadows National Wildlife Refuge were not conducted because no specific uses that would impact site resources were identified in the *Secretarial Report*.

Uses of this cooperative activity area include access and contribution to biological management of the area. Plant communities in and around Ash Meadows National Wildlife Refuge include Mojave creosote bush scrub, shadscale scrub, alkali sink scrub, alkaline marsh, and varying riparian habitats. Sand dunes are located in the central part of the refuge. Desert scrub communities present in the drier upland soils are similar to descriptions provided above. Alkaline marsh and riparian areas support species such as sedges and rushes, reed grass, saltgrass, sea-blite, nitrophila, iodine bush, and shrub and tree species such as arroweed, willows, mesquite, Fremont cottonwood, tamarisk, and velvet ash (*Fraxinus velutina*).

Special-status plant species that are endemic to this area include Amargosa niterwort, spring loving centaury, Ash Meadows sunray, Ash Meadows gumplant, Ash Meadows milkvetch, Ash Meadows ivesia, and Ash Meadows blazingstar.

3.63 Special-Status Plant Species

Plants that would be considered to have special status under NEPA include specific or infraspecific classifications of plants that meet one or more of the following criteria:

- Plants listed or proposed for listing as threatened or endangered under the federal Endangered Species Act.
- Plants listed by the Nevada Division of Forestry as threatened with extinction (NRS 527.260–.300).
- Plants listed or proposed for listing as rare, threatened, or endangered under the California Endangered Species Act or California Native Plant Protection Act of 1977.
- Plants identified by the U.S. Fish and Wildlife Service that are candidates for potential future listing as threatened or endangered under the federal Endangered Species Act.
- Plants identified by the Bureau of Land Management (BLM) as "Sensitive Species."
- Plants included in the California Native Plant Society's (CNPS) *Inventory of Rare and Endangered Vascular Plants of California* (Skinner and Pavlik 1994) that can be shown to meet criteria for state listing.
- Plants protected under Nevada State law as a cactus, yucca, or Christmas trees (NRS 527.060–.120).

A list of potentially occurring special-status plant species was developed for lands proposed for transfer, acquisition and transfer, and cooperative activities/special uses by querying the California Natural Diversity Database (CNDDB), the Nevada Natural Heritage Program (NNHP), and in consultation with BLM and NPS resource staff (Chapter 5.0, "Consultation and Coordination."). Habitat requirements of potentially occurring species including elevation, plant community associations, and soil types were reviewed and evaluated against field conditions. Up to 20 special-status plant species, including BLM sensitive species, were identified as potentially occurring in the vicinity of the lands considered in the LEIS. Field and literature investigations were conducted to evaluate the potential presence of these species within the study areas based on range and habitat requirements. Information about habitat requirements, range, and nearest occurrence was compiled from the *Jepson Manual Higher Plants of California* (Hickman 1993), *A California Flora and Supplement* (Munz and Keck 1968), the CNPS *Inventory*, the NNHP and the CNDDB. Sensitive plant species known or potentially occurring in the general area of lands under consideration in this LEIS are shown in Table 10.

Several of the land transfer and cooperative activity areas contain plant species that are protected under Nevada state law such as cacti, yucca, and Christmas trees. These areas include Death Valley Junction, Lida Community parcel, Lida Ranch, Lida Tribal Use Area, and Scotty's Junction. Taxa that occur on these sites that would be protected under this law include pinyon pines, junipers, Joshua tree, and all cactus species. The BLM Tonopah Field Station issues permits to remove Christmas trees, cactus, Joshua trees, and firewood from public lands. BLM issues the permits and provides the customer with a State tag to transport the plant. Nevada Division of Forestry issues "salvage permits" for major construction job sites.

3.7 WILDLIFE

This section provides a description of existing wildlife resources and habitat descriptions for lands proposed for transfer, acquisition and transfer, and cooperative activities/special uses. Traditional activities in cooperative activity/special use areas within Death Valley National Park shall not include taking of wildlife. Potentially affected wildlife in each proposed parcel was characterized by reviewing available documents, California Natural Diversity Database and Nevada Natural Heritage Program research, contacting agency staff at NPS, BLM, and USFWS, and through a site reconnaissance conducted on January 18 through 21 and February 23 and 24, 2000, by Harding Lawson Associates (HLA), as well as follow-up surveys performed on June 21, June 22, and July 4 through August 7, 2000.

3.7.1 Regional Setting

3.7.1.1 Fauna

The proposed sites are located within the region of the Mojave and Great Basin Desert range. Habitat ranges from mesquite-shadscale scrub at or below sea level to pinyon -juniper woodland at elevations approaching 6,000 feet above mean sea level. Springs are located throughout the region and are important sources of water for desert wildlife. Several "guzzlers" (water catchments), have been installed and maintained at some spring locations for the benefit of local wildlife species, including the Nelson's bighorn sheep, a California BLM-listed sensitive species.

Death Valley National Park and the adjacent desert support a variety of wildlife species, including 51 species of native mammals, 2 species of introduced large mammals, 307 species of birds, 36 species of reptiles, 3 species of amphibians, and 5 species and 1 subspecies of native fishes (Hansen 1972 and 1973; Landye 1973). Small mammals are more numerous than large mammals, such as desert bighorn, coyote, bobcat, mountain lion, and mule deer. Mule deer are present in the pinyon-juniper associations of the Grapevine, Cottonwood, and Panamint Mountains.

Characteristic vertebrate species in the region surrounding the proposed Timbisha homeland and cooperative activity areas include coyote (*Canis latrans*), raven (*Corvus corax*), desert cottontail (*Sylvalagus audubonii*), and black-tailed jackrabbit (*Lepus californicus*). Wild mustang (*Equus caballus*) and burros (*Equus assinus*) were observed on several sites. A pair of coyotes was observed at the Furnace Creek project as well as tracks and scat from ringtail (*Bassariscus astutus*), kit fox (*Vulpes velox),* and kangaroo rat (*Dipodomys* spp.).

Portions of the proposed private parcels at Lida Ranch, and the Lida Community parcel and Centennial sites provide suitable habitat for the desert bighorn sheep (*Ovis canadensis nelsoni*). Death Valley Junction, Scotty's Junction, and Indian Rancheria are situated on historical migration routes used by the bighorn to travel between their winter and summer ranges. These parcels are considered to be important lambing areas as well.

Portions of the Centennial site are reported by the BLM sensitive-species list to provide habitat for the Panamint alligator lizard (*Gerrhonotus panamintinus*), Mohave ground squirrel (*Spermophilus mohavensis*), and burrowing owl (*Speotyto* [= Athene] cunicularia). The desert tortoise (*Gopherus agassizii*), a federally listed threatened species and a California Department of Fish and Game threatened species, is known from localities within and surrounding Death Valley National Park. No evidence of burrows or its presence was observed at any of the lands subject to transfer, acquisition and transfer, or cooperative activity/special use locations.

3.7.1.2 Special-Status Species

The following section discusses special-status wildlife species potentially occurring in the project area. Special-status wildlife species include the following:

- Animals included on NPS Sensitive Species List or given special consideration.
- Animals included on BLM Sensitive Species List or given special consideration.
- Animals listed or proposed for listing as threatened or endangered under the Federal Endangered Species Act (50 C.F.R. 17.11 and 17.12, January 1, 1989) or the California Endangered Species Act (C.D.F.G. 1989).

Within Death Valley National Park, there are confirmed populations or viable habitat for three federally endangered, one federally threatened, two federally proposed-for-listing, four California endangered, four California threatened, and four California rare, and one Nevada threatened animal species. Federally listed species in Death Valley include desert tortoise, Devil's Hole pupfish *(Cyprinodon diabolis)*, and southwestern willow flycatcher *(Empidonax trailli extimus)*. Federally listed species for which final recovery plans exist are the desert tortoise and Devil's Hole pupfish. Special-status animals potentially occurring on the project site are listed in Table 12.

California-listed species, other than those also federally listed or proposed-for-listing, are California (western) yellow billed cuckoo (*Coccyzus americanus occidentalis*), willow flycatcher, Cottonball Marsh pupfish (*Cyprinodon salinus milleri*), and Mohave ground squirrel.

3.7.1.3 Methodology

To assess the potential for special-status wildlife species to occur in the vicinity of lands proposed for transfer, acquisition and transfer, and cooperative activities/special uses, field reconnaissance information was gathered during January 18 through 21 and February 23 and 24, 2000. Field data was gathered to characterize the wildlife habitat in the region and lands subject to actions under consideration in the legislation. In addition, a review was made of California Natural Diversity Database and Nevada Natural Heritage Program records for the area covered by U.S Geological Survey (USGS) quadrangles for Furnace Creek, Nevares Peak, east of Nevares Peak, Devil's Speedway, Devil's Golf Course, Echo Canyon, Ryan, Beatty Junction, Death Valley Junction, Green Water Canyon, east of Ryan, west of Eagle Mountain, Franklin Well, Centennial Canyon, Centennial Flat, and Talc City Hills.

The initial wildlife and habitat survey addressed two issues: (1) recording and verifying habitat makeup of the proposed parcel, and (2) recording and verifying the presence of regional and special-concern species that have been recorded or have the potential to occur on a proposed parcel. Information regarding wildlife resources occurring in the study area was gathered from a combination of field investigations, review of published literature and survey records, and consultation with resource agencies within their respective jurisdictions. Potentially affected wildlife in each proposed parcel was characterized by reviewing available documents, California Natural Diversity Database and Nevada Natural Heritage Program research, and contacting relevant agency staff at NPS, BLM, and USFWS. Onsite investigation consisted of direct survey, glassing and observation of each project site, and examination of burrows, burrow aprons, scat, and tracks. Plant communities onsite were also used as indicators of potentially occurring or resident wildlife species. Any wildlife sighted was photographed, if possible, and recorded for future reference.

Surveys were conducted throughout the day starting at sunrise and continuing until dusk. Special consideration was given to being onsite at periods during the day that might yield peak movement of

wildlife. Several mines are located within the Lida area lands proposed for transfer or acquisition and transfer. The entrances to these mines were inspected for signs of use by bats. No bats were sighted although there was evidence of their presence in the form of scat located on the floor of each mine near the entrance. Species observed or expected onsite are discussed along with special concern species that may find suitable habitat within the parcels. Regionally occurring sensitive species are located in Table 11. Regionally occurring protected or special-concern species that were sighted or have the potential to occur on lands identified for transfer, acquisition and transfers, or cooperative activities/special uses are located in Table 12 along with their federal and state status.

3.7.2 Site-Specific Setting

The following section details wildlife known or expected to occur on lands proposed for transfer, acquisition and transfer, and cooperative activities/special uses.

3.7.2.1 National Park Service

3.7.2.1.1 Land Transfer in Trust

Furnace Creek

This parcel is considered an alkali sink habitat with mixed arroweed, shadscale scrub, and mesquite. The terrain consists of flat, sandy, gravel pan interspersed with various salt-tolerant plant species and mesquite hummocks. These mesquite hummocks become quite dense toward the western side of the site giving way to arroweed and saltbush along the extreme western edge of the site. In addition to providing refuge for many resident animal species, the mesquite hummocks also provide foraging or roosting areas for many species that occur in or pass through the region.

Common species associated with this parcel include the coyote, raven, and desert iguana (*Dipsosaurus dorsalis).* Other characteristic species of the shadscale aspect of alkali scrub include the pallid kangaroo mouse (*Microdipodops pallidus*), chisel-toothed kangaroo rat (*Dipodomys nitratoides*), zebra-tailed lizard (*Callisaurus draconoides*), and the San Emigdio blue butterfly (*Celastrina spp.*), which utilizes the fourwing saltbush as a host plant (Jaeger and Smith 1966; Pyle 1981).

A pair of coyotes was observed on the Furnace Creek site, as well as tracks and scat from ringtail cat and desert kit fox (*Vulpes macrotis*). The desert tortoise is known from several localities within the Park but the habitat found on the Furnace Creek site is marginal and no tortoises or evidence of use by this species was found during the survey. Other species found here include the sidewinder (*Crotalus c. cerastes*), desert banded gecko (*Coleonyx v. variegatus*), and zebra-tailed lizard. In addition, there are several waterfowl species not normally associated with the region, that take advantage of the small ponds located on the Furnace Creek golf course. Although they may pass through the parcel it is unlikely that they use it for foraging or nesting. Some disturbances from human activity are associated with this location; mainly in the form of noise from the small airstrip located north of the site and trail rides led by Furnace Creek Ranch personnel.

Evidence (scat, tracks, or direct observation) of sensitive species as well as the California Department of Fish and Game species list, BLM sensitive-species list, and records from Nevada Natural Heritage Program were used to compile a table of regionally occurring species of special concern. The California Natural Diversity Database lists several sensitive species associated with the Furnace Creek area including the yellow warbler (*Dendroica petechia brewsteri*), Salt Creek pupfish *(Cyprinodon salinus salinus*), and Badwater snail (*Assiminea infima*). No suitable habitat for either the Salt Creek pupfish or the Badwater snail exists on the parcel, however, the yellow warbler may find suitable nesting and

foraging habitat within the larger mesquite thickets occurring onsite. Table 11 provides a listing of regional wildlife sighted or reported to occur in the area. Special-status species that were observed or reported to occur in the region are listed in Table 12.

3.7.2.1.2 Proposed Authorization of Private Land Acquisition

Indian Rancheria

Palm Spring, located ~~near~~ seven to ten miles northeast of Indian Rancheria, provides important resources and habitat for local wildlife species. Sensitive species recorded by the California Natural Diversity Database as occurring in the area include the following: Inyo Mountains slender salamander (*Batrachoseps campi*), Monarch Butterfly (*Danaus plexippus*), Nelson's bighorn sheep (*Ovis canadensis nelsoni*), and the Panamint alligator lizard. Nesting habitat is available for and used by the prairie falcon *(Falco mexicanus*), least Bell's vireo (*Vireo bellii pusillus*), and gray vireo (*Vireo vicinior*). Other regional species of concern that may be present in the area are listed in Table 12 along with protection status and ranking.

3.7.2.1.3 Tribal Cooperative Activity/Special Use Areas

Furnace Creek—Tribal Mesquite Use Area and Buffer Area

For a detailed listing of common and special-status wildlife species, see Section 3.7.2.1.1, "Land Transfer in Trust, Furnace Creek."

Timbisha Shoshone Natural and Cultural Preservation Area

Hunter Mountain

A list of regionally occurring wildlife is provided in Table 11, for sensitive and special-status wildlife species refer to Table 12.

Wildrose

A list of regionally occurring wildlife is provided in Table 11, for sensitive and special-status wildlife species refer to Table 12.

Saline Valley Warm Springs

A list of regionally occurring wildlife is provided in Table 11, for sensitive and special-status wildlife species refer to Table 12.

Other Special Use Areas

Mesquite Springs and Daylight Pass

A list of regionally occurring wildlife is provided in Table 11, for sensitive and special-status wildlife species refer to Table 12.

3.7.2.2 Bureau of Land Management

3.7.2.2.1 Land Transfers in Trust

Death Valley Junction

During field surveys at Death Valley Junction, a small band of mustangs was observed moving through the parcel toward a stock pond located across State Route 127. It is possible that they utilize the parcel for foraging and foaling purposes.

Common species associated with this parcel include the coyote, raven, and sagebrush lizard (*Sceloporus graciosus*). Other characteristic species of the shadscale aspect of alkali scrub include the pallid kangaroo mouse, chisel-toothed kangaroo rat, zebra-tailed lizard, and the San Emigdio blue butterfly, who uses the fourwing saltbush as a host plant (Jaeger and Smith 1966; Pyle 1981). With the exception of species occurring at the Ash Meadows National Wildlife Refuge to the east, the Nevada Natural Heritage Program has no records for sensitive taxa on the parcel. However, their data suggest that there may be suitable habitat available for the Mojave desert tortoise (*Xerobates agassizii*), banded gila monster (*Heloderma suspectum*), and chuckwalla (*Sauromalis obesus*). The potential for these species to occur on the Death Valley Junction parcel is marginal due to the very limited components that constitute the necessary habitat requirements needed by this species and the fact that these parcel falls outside the recorded ranges for these species. Both the banded gila monster and chuckwalla require south-facing, rocky hillsides that contain suitable hibernacula and foraging areas, neither of which was present on the proposed transfer parcel.

Marginally suitable habitat for desert tortoise occurs in the area. No evidence of tortoise in the form of palettes (temporary resting sites) or burrows was noted during any part of the survey. A more detailed survey focused on suitable habitat for Mojave desert tortoise was conducted from August 3 through August 7, 2000. No direct or indirect evidence of Mojave desert tortoise was encountered during the survey. Any occurrence would probably be either casual or accidental and would not indicate a self-sustaining population. Table 11 lists regional wildlife observed or reported as occurring in the area. Species of special concern that were observed or reported to occur in the region are listed in Table 12.

Centennial

Habitat on the Centennial parcel is varied with Mojave mixed woody scrub and Joshua tree scrub occurring across the entire site. A year-round water source is located at Black Rock Spring, approximately 2.5 miles south of the Centennial parcel, and serves as an important water source for burros, horses, and bighorn sheep as well as many other vagile vertebrate species that occur in the area. Some commonly occurring animals include but are not limited to mountain lion (*Felis concolor*), coyote, desert mule deer (*Odocoileus hemionus*), and bobcat (*Felis rufus*). Sensitive species recorded by the California Natural Diversity Database to occur in this area include the Panamint alligator lizard, burrowing owl, and Mohave ground squirrel. Alligator lizards generally frequent moist environments in foothills and mountains, but they may range into arid lowlands in the vicinity of springs and washes if there is sufficient cover available.

The Panamint alligator lizard ranges from scrub desert and the Joshua tree zone to the lower edge of the pinyon-juniper belt (Stebbins 1985). It is generally found beneath thickets of willow and wild grape near springs, or among rocks and talus slopes in drier habitats that support creosote bush and desert mint. The Panamint alligator lizard is reported from desert mountain ranges to the north, south, and west of Death Valley National Park. There are recorded sightings for this species in the Coso Mountains (Inyo County) and the species is listed as occurring on Centennial Flat by the California BLM office at Ridgecrest.

The Centennial parcel is within the range of Mohave ground squirrel (*Spermophilus mohavenses*). On June 21 and 22, a reconnaissance survey of the parcel was conducted. Mohave ground squirrel was observed on the parcel during the survey.

Table 11 lists regional species that might occur in this area. Other sensitive species recorded as potentially occurring in this area are listed in Table 12 along with their respective federal and state status.

Scotty's Junction

In the northwest corner of Scotty's Junction the vegetation is shadscale with creosote bush.

The parcel is also located within the bounds of the ~~Gold Mountain~~ Palmetto Herd Management Area (HMA). The appropriate management level for this area is 50 wild horses. No burros or horses were observed but evidence of their presence was found in the form of tracks and scat. Cattle are grazed in this area, although none were observed during field surveys. A small abandoned well and maintenance building are located on the southwest portion of the site and exhibited signs of use by owls and other birds of prey. Several sagebrush lizards were found onsite as well as shed skins from a sidewinder.

The Nevada Natural Heritage Program has no records for sensitive taxa on the parcel. However, their data suggests that there may be suitable habitat available for the desert tortoise, banded gila monster, and chuckwalla. The potential for these species to occur onsite is viewed as marginal due to the very limited components that constitute the necessary habitat requirements needed by these species and the extent to which this parcel falls outside of their home ranges. Both gila monster and chuckwalla require south-facing, rocky hillsides that contain suitable hibernacula and foraging areas, neither of these was evident on parcel.

~~Because of the time of year, n~~No tortoises were observed onsite. ~~and no evidence of tortoise in the form of pallets (temporary resting places) or burrows were noted.~~ The creosote bush population at the northwest portion of the site provides a limited habitat component for the desert tortoise. ~~but any occurrence of this species would probably be either casual or accidental.~~ A more detailed survey for Mojave desert tortoise was conducted from July 4 through August 2, 2000. A single, inactive but potential burrow was identified in a stand of creosote bush northwest of Nevada State Route 267. No evidence of Mojave desert tortoise was encountered on the parcel south of Nevada State Route 267. There have been sightings of desert tortoise south of Scotty's Junction in Spring 2000 (William Fisher, BLM, telephone conversation with Michael Johnson, HLA, August 17, 2000).

Other observed or expected species are listed in Table 11. Special status species that were observed or expected onsite are listed in Table 12.

Lida Community Parcel

The Lida Community parcel is viewed as primarily pinyon-juniper woodland with big sagebrush occurring at lower elevations. Joshua trees also occur as well as several small cactus species. Common animal species found here include but are not limited to mountain lion, coyote, desert mule deer, and bobcat.

There are several mines located on the parcel that serve as potential roosts for bat species that occur in the area. All surveyed mines were explored to the distance visible from the entrance and examined for any evidence of use by bats and other wildlife. Woodrat (*Neotoma lepida*) was evident in every mine explored, as well as little pocket mouse (*Perognathus longimembris*) and deer mouse (*Peromyscus maniculatus*). Evidence of use by bats was found in the form of guano on the floors near entrances of the

mines. The Lida Community parcel falls within the range of the spotted bat, (*Euderma maculatum*), one of the rarest bats in North America, and potentially supports a population of this species at the higher elevations where there is suitable habitat. Although no bats were directly observed within the mines, their droppings indicate they use them and it is probable that they use different mines, at different times of the year. Other notable observations include tracks and scat from a mountain lion that were observed onsite within the bounds of the parcel as well as scat from a black bear (*Ursus americanus*).

Topography in the area varies with rocky outcrops at higher elevations and gently sloping hills throughout the rest of the parcel. As mentioned above, the plant communities are primarily pinyon-juniper at higher elevations with big sagebrush dominating the rest of the site.

Human disturbances in this area include several mining claims, a small unused airstrip located just offsite to the west, and extensive grazing by cattle. There are several private residences in the immediate vicinity of the parcel. Other disturbances noted onsite include off-highway vehicle use, recreational shooting, and camping.

The Nevada Natural Heritage Program has no records for sensitive taxa on the parcel. However, their data suggest that there may be suitable habitat available for the desert tortoise, a federally threatened species; the banded gila monster, a Nevada BLM special status species; and the chuckwalla, a Nevada BLM sensitive species. The potential for these species to occur onsite is viewed as marginal due to the very limited components that constitute the necessary habitat requirements needed by these species and the extent to which this parcel falls outside of their home ranges. Both the gila monster and chuckwalla require south-facing, rocky hillsides that contain suitable hibernacula and foraging areas, neither of these was evident on the parcel. The desert tortoise could possibly find some suitable habitat in the area although it would be very limited and at the upper extreme of their elevation range limits. No evidence of tortoise in the form of pallets (temporary resting sites) or burrows was noted during any part of the survey. Occurrence of desert tortoise would likely be either casual or accidental.

Table 11 lists regional wildlife observed or reported as occurring in the area. Special-status species reported to occur in the area or onsite by the Nevada Natural Heritage Program are listed in Table 12.

3.7.2.2.2 Proposed Authorization of Private Land Acquisition

Lida Ranch

The Lida Ranch parcel is viewed as primarily pinyon-juniper woodland with big sagebrush occurring at lower elevations. Common animal species found here include but are not limited to mountain lion, coyote, desert mule deer, and bobcat. The topography varies with rocky outcrops at higher elevations and gently sloping hills throughout the rest of the parcel.

Disturbances in this area include several mining claims, a small airstrip located just offsite to the west, and apparent unauthorized cattle grazing. There are several private residences in the immediate vicinity of Lida Ranch. Other disturbances noted onsite include off-highway vehicle use, recreational shooting, and camping.

The Nevada Natural Heritage Program has no records for sensitive taxa on the parcel. However, their data suggest that there may be suitable habitat available for the desert tortoise, a federally threatened species; banded gila monster, a BLM special-status species, and chuckwalla, a Nevada BLM sensitive species. The potential for these species to occur onsite is viewed as marginal due to the very limited components that constitute the necessary habitat requirements needed by these species and the extent to which this parcel falls outside of their home ranges. Both the chuckwalla and banded gila monster prefer rocky

south-facing slopes that provide suitable denning sites and foraging areas. Additionally, the vegetation is predominately Great Basin scrub and provides very little browse for the chuckwalla and little habitat for the ground-nesting birds who form an important part of the banded gila monster's diet.

As mentioned above, the desert tortoise is reported by the Nevada Natural Heritage Program as having potential habitat in the area but no suitable habitat was seen onsite and because of the time of year no tortoises were observed. Table 11 lists regional wildlife sighted or expected to occur in the area. Species of special concern that were observed or reported to occur in the region are listed in Table 12.

3.7.2.2.3 Tribal Cooperative Activity/Special Use Areas

Eagle Mountain and Warm Sulphur Springs

For a detailed listing of potentially occurring species in the Eagle Mountain and Warm Sulphur Springs areas, see Sections 3.7.2.2.1, "Land Transfers in Trust" and 3.7.2.3.1, "Tribal Cooperative Activity Area, Ash Meadows National Wildlife Refuge."

Lida Tribal Use Area

For a detailed listing of wildlife species occurring in the Lida area, see Sections 3.7.2.2.1, "Land Transfers in Trust, Lida Community Parcel" and 3.7.2.2.2, "Proposed Authorization of Private Land Acquisition, Lida Ranch."

3.7.2.3 U.S. Fish and Wildlife Service

3.7.2.3.1 Tribal Cooperative Activity Area

Ash Meadows National Wildlife Refuge

The Ash Meadows National Wildlife Refuge is in the Ash Meadows portion of the Amargosa Desert and includes about 22,117 acres of spring-fed wetlands and alkaline desert uplands. The refuge provides habitat for a biotic association found nowhere else in the world. This concentration of unique native plants and animals distinguishes Ash Meadows National Wildlife Refuge as having a greater concentration of endemic species than any other local area in the United States.

Species Addressed in the Ash Meadows Recovery Plan

Published by USFWS in 1990, the *Recovery Plan for the Endangered and Threatened Species of Ash Meadows, Nevada*, addressed recovery efforts for the following federally listed species located at Ash Meadows, Nevada, and on NPS- and BLM-managed areas within adjacent lands in California.

Devil's Hole pupfish

The Devil's Hole pupfish (*Cyprinodon diabolis*) is listed as endangered by the federal government and the State of Nevada. A limestone cave at Devil's Hole, for which the pupfish is named, is the only natural habitat of the Devils Hole pupfish. Devil's Hole is a small tract of land administered by Death Valley National Park located inside of a larger spring complex in Nevada called the Ash Meadows. Devils Hole falls within the boundaries of Ash Meadows National Wildlife Refuge. The Devil's Hole cave's water level is determined by the aquifer and has no surface outlet. Historical and ongoing mining of groundwater in Ash Meadows has occasionally directly lowered the water level in the Devil's Hole cave,

exposing a shallow limestone shelf on which the pupfish depend for food and spawning (Soltz and Naiman 1978).

A decline of the Devil's Hole pupfish population drove litigation resulting in a U.S. Supreme Court ruling (*Cappaert v. U.S.*) upholding the maintenance of a minimum water level at the cave. From 1980 until 1990, the population status was upward but persistently small and localized. The species is considered not delistable; the criteria for its protection are the maintenance of water levels and water chemistry. Other species of special consideration located at the limestone cave or at springs within the 40 acres are the Devil's Hole warm springs riffle beetle (*Stenelmis c. calida*), and the Amargosa tryonia snail (*Tryonia variegata*). Water levels are currently monitored by NPS. The combined records from water level monitoring by the National Park Service and the U.S. Geological Survey dating from the 1960s demonstrated a maximum level of recovery in 1989; thereafter, a downward trend has persisted.

Other Ash Meadows Endemic Species

Other species endemic to the Ash Meadows area include the Warm Springs pupfish (*Cyprinodon nevadensis pectoralis*), Ash Meadows Amargosa pupfish (*Cyprinodon nevadensis mionectes*), Ash Meadows speckled dace (*Rhinichthys osculus nevadensis*), and Ash Meadows naucorid (*Ambrysus amargosus*). Amargosa pupfish and speckled dace range into California at locations along the Amargosa drainage and at various parcel supporting stream, spring, salt marsh, moist alkaline soil, calcareous, or riparian habitats. Additional species of concern in the area include the Ash Meadows montane vole (*Microtus montanus nevadensis*), white-faced ibis (*Plegadis chihi*), Amargosa naucorid bug (*Pelocoris shoshone amargosus*), and a host of spring snails (including Amargosa tryonia).

Regional water drawdown has been a contributing factor for listed and other sensitive species and potential benefits of regional monitoring and conservation. A decline of the listed species at Ash Meadows has been attributed not only to groundwater removal, but also the presence of exotic species and habitat alteration.

Although the 1988 *General Management Plan and Environmental Assessment*: Death Valley National Monument report requested the management of Devil's Hole be transferred to the U.S. Fish and Wildlife Service, this plan and the 1990 recovery plan recommend that the National Park Service retain legal responsibility for the 40 acres under its jurisdiction.

Riparian-Dependent Bird Species

Riparian-dependent bird species cited in the 1990 recovery plan include the southwestern willow flycatcher (*Empidonax trailli extimus*), least Bells vireo (*Vireo bellii pusillus*), and California/western yellow-billed cuckoo (*Coccyzus americanus occidentalis*).

Mesic habitats in the planning area are not noted for high numbers of the above named riparian-dependent species (relative to their known ranges), but such habitats in the plan area do provide a degree of essential foraging and nesting habitat. To date, other than along the Colorado River, the study of the vireo and flycatcher in the desert have been concentrated along the Mojave River. Small numbers of all three species have been confirmed along the Amargosa River and in Death Valley.

In May 1986, least Bell's vireo was federally listed as endangered. Its critical habitat was designated in February 1994. Endangered status took effect for the willow flycatcher in March 1995, and a final determination of critical habitat was made in July 1997. Listing of the willow flycatcher by the State of California is at the species level. Federal recovery planning is underway for both species. There is no critical habitat located within Death Valley National Park for either subspecies.

The western yellow-billed cuckoo, state endangered since 1988, generally requires a broader stand of riparian growth than either the vireo or flycatcher, although loss of riparian habitat is the major common factor influencing the decline of all three species. The cuckoo does not appear to be affected by brood parasitism by the brown-headed cowbird (*Molothrus ater*) as are the least Bell's vireo and southwestern willow flycatcher. In this brood parasitism behavior, cowbirds introduce their eggs into the nest and care of a host bird species, competing directly with the success of the host's young and sometimes eating or ejecting the host's eggs. (Thelander 1994).

Cottonball Marsh pupfish (*Cyprinodon salinus milleri*)

A killifish subspecies the Cottonball Marsh pupfish is found only in Death Valley, in portions of Cottonball Marsh on the west side of the central valley floor approximately 5 miles south of Salt Creek (NPS 1988). Threats to its survival include direct and indirect habitat alteration from changes to water levels, quality, and chemistry. An overall concern with regional water diversion is not limited to this species; rather, water diversion has the potential to affect a large number of sensitive aquatic species (including insects and snails) and riparian obligates.

Mohave ground squirrel

~~only known occurrence of the~~ Mohave ground squirrel (*Spermophilus mohavensis*) is known to occur in the planning area ~~is~~ at Lee Flat, in Death Valley National Park. This represents the northernmost extension of the squirrel's range, which is limited to the northwestern Mojave Desert. No records exist of past or current presence of the squirrel in Panamint Valley or Saline Valley. As discussed in Section 3.7.2.2.1, Mohave ground squirrel is known to occur on the Centennial parcel.

Although previously found in a variety of vegetation associations to 5,600 feet elevation, the species seems to prefer large alluvial-filled valleys and deep, fine-to-medium textured soils vegetated with creosote bush scrub, shadscale scrub, or alkali sink scrub wherever desert pavement is absent (Fish and Wildlife Service 1995a). Winterfat (*Krascheninnikovia lanata*) and spiny hopsage (*Grayia spinosa*) are important dietary components; the squirrel favors forbs in wet years and winterfat in dry years. Diets of domestic sheep overlap that of the Mohave ground squirrel more so than do those of cattle or feral burros (Leitner, pers. comm. 1997).

The species' state (California) threatened status is based on habitat loss due to agricultural, recreational, and military vehicle use. In 1995, the U.S. Fish and Wildlife Service reviewed a petition to list the species as federally threatened and, while advising continued monitoring for impacts due to habitat degradation/ fragmentation and drought, determined a lack of sufficient information to warrant a status review (Fish and Wildlife Service 1995b; 1995c). Substantial new information is still lacking about recent trends in squirrel populations, historic occupied range, current habitat, and vulnerability of key populations.

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4.0 DESCRIPTION OF POTENTIAL ENVIRONMENTAL CONSEQUENCES

4.1 INTRODUCTION

This chapter discusses the potential environmental consequences (impacts) to the existing Affected Environment that could occur from implementation of alternatives described in this LEIS. Alternatives considered include the Preferred Alternative and No Action.

The environmental consequences of the Preferred and No-Action alternatives are evaluated to include the following types of environmental consequences:

- Direct effects—consequences of the action that occur at the same time and in the same place (removal of habitat is an example of a direct impact).

- Indirect effects—consequences of the action that are reasonably foreseeable, but that are separated in time or place from the action (detrimental effects of groundwater removal on riparian vegetation downgradient is an example of an indirect impact).

- Cumulative effects—consequences of the action that may be minor in and of themselves, but when combined with other approved, pending or reasonably foreseeable actions may result in a demonstrable positive or negative effect on the environment (e.g., effects on water supply may be minor on an action-specific basis, but cumulatively important).

Relationship of Short-Term Uses and Long-Term Productivity Regarding the Preferred Alternative

This chapter describes the relationship of the short-term impacts of the actions proposed in this alternative to the long-term productivity of the human environment inside and outside Death Valley National Park. The overall concept of this alternative is to transfer lands into trust to the Secretary of the Interior for the Timbisha Shoshone Tribe homeland. The short-term actions are administrative in nature and would not generate environmental impacts. Long-term actions, such as construction of housing, would vary in their impacts based on the type and intensity of development and the area being developed. Most work would be done in previously disturbed areas and mitigation measures would be incorporated into the project design. The long-term effect on the natural environment would be minor in terms of lost habitat or resources but the positive effect on resource protection and enhanced visitor experience would be great for decades to come.

Unavoidable Adverse Effects Regarding the Preferred Alternative

The Preferred Alternative is not expected to unavoidably affect overall conditions for archeological sites or for rare, threatened, or endangered species. Human activity in known or potential habitat for these species would be evaluated when development plans are brought forward.

Irreversible and Irretrievable Commitment of Resources Regarding the Preferred Alternative

Irreversible commitments of resources include destruction of nonrenewable resources such as historical or archeological resources. Even with mitigating measures, it is possible that such losses could occur through development at sites such as Furnace Creek. The National Park Service (NPS) and Bureau of Land Management (BLM) would take no other actions that would constitute an irreversible commitment of resources. Irretrievable commitment of resources are uses of renewable resources in construction, for

example, of new structures and roads. The funding and renewable resources used for these examples would become unavailable for other activities.

Scope of Impact Analysis

The legislative proposal incorporates the major elements associated with establishing lands in trust for the Tribe, acquisition of private parcels, and areas subject to cooperative activities/special uses. Specific development proposals for trust parcels have not been prepared. Consequently, the design, area of disturbance, ~~projected~~ precise water requirements, and other environmental factors cannot be evaluated with certainty. Further, because these lands would be held in trust for the Tribe in perpetuity, specific land use types and intensities may be subject to change over time. The impact analysis will be limited to the proposed action of land transfers in trust and not potential future development uses on transferred lands nor actions subject to future cooperative agreements. Cooperative activities and special uses identified in the *Secretarial Report* and the Proposed Action would be subject to all applicable acts, codes, rules, and regulations at the time the cooperative agreement is completed.

This document uses the *Secretarial Report* as the primary source for descriptive data regarding the anticipated types and scale of development on trust lands. Additional information is cited as appropriate and incorporated into the evaluation of environmental consequences.

The alternatives discussed in this document are based in large part on the *Secretarial Report,* which established broad, overarching management guidelines for lands to be transferred or subject to cooperative activities/special uses. The general nature of the alternatives requires that the analysis of impacts also be general. The level of specificity and quantification of environmental effects is directly related to the level of detail in the *Secretarial Report* and final legislation. Other actions (e.g., cooperative activities/special uses within large areas of the Park or on other federal lands) are less specific, necessitating a more general, qualitative evaluation of environmental consequences. As a result, this LEIS is programmatic and presents an overview of potential impacts relating to each alternative. This LEIS will serve as a basis for future NEPA documents prepared to assess subsequent developments or ~~management~~ actions to be taken by federal agencies implementing cooperative agreements.

Impact topics were selected for analysis by determining which resources or elements of the human environment would be affected by alternative actions to address planning issues and concerns described in the Purpose and Need section. Methods used to avoid or assess impacts are discussed below. Those resources and environmental concerns that would not be appreciably affected by either alternative were eliminated from further consideration and comparative analysis. Topics considered but dismissed from further analysis include:

Geology

Transfer of lands into trust would not substantially affect geology. In each alternative, within each area under consideration, the total disturbance to soils would vary by area. At Furnace Creek for example it is anticipated that most disturbance would occur in previously disturbed areas, reducing overall impacts. Other proposals such as Centennial development plans would likely include areas not previously disturbed. In those instances mitigation techniques would be used to reduce impacts to the minimum necessary to accomplish the objective. Mitigation might include careful site selection, salvaging topsoil, and rehabilitation of disturbed areas.

Transportation

Transfer of lands into trust would not adversely affect traffic patterns or levels of service.

Visual Resources

Transfer of lands into trust would not substantially affect visual resources. Lands identified for transfer by the NPS and BLM (with the exception of the Centennial parcel) are near existing residential and commercial uses.

The transfer parcels (with the exception of Centennial Flat) are in areas where light from residential and commercial uses is part of the nighttime visual environment. The Centennial parcel has no permanent development contributing light to the nighttime visual environment. The only light sources on Centennial Flat are vehicular traffic on State Route 190 and occasional aircraft. If transferred, development for residential or other uses would introduce a light source on Centennial Flat. Although this new light source is recognized, there are currently no applicable policies which identify night sky as a resource value under the California Desert Conservation Area Plan (1980) or amendments.

Air Quality

Transfer of lands into trust would not have an impact on air quality. In the future it is possible that temporary impacts on air quality could occur associated with construction activities. These would primarily involve temporary increases in particulates (fugitive dust) and vehicle emissions (where motorized equipment is used). Future assessments of actions would likely require mitigating measures (such as watering to keep dust down) that would be taken to limit even temporary and localized impacts.

The Centennial parcel is within an area of non-attainment for PM-10, primarily related to blowing dust from Owens Lake. Although the establishment of a trust parcel on Centennial Flat could expose users/residents of the parcel to blowing dust from Owens Lake. The parcel or any subsequent development would not be expected to contribute to an increase in PM-10 emissions within this airshed.

Noise

Transfer of lands into trust would not substantially affect noise levels.

Wetlands

There would be no actions in wetlands under either alternative.

Accordingly, this chapter describes the environmental consequences for topics discussed in the Affected Environment (Chapter 3.0). Topics include: Cultural Resources; Water Resources; Socioeconomic Issues and Environmental Justice; Land Use, Recreation, and Wilderness; Vegetation; and Wildlife.

4.2 CULTURAL RESOURCES

Potential effects on cultural resources are not considered on a location-specific basis owing to the sensitive nature of resources. Development associated with transferred lands could encounter prehistoric or historical artifacts, including those associated with occupation by ancestors of the present Timbisha Shoshone Tribe.

4.2.1 Preferred Alternative

Implementation of the Preferred Alternative would provide the Timbisha Shoshone Tribe, National Park Service, and Bureau of Land Management greater opportunities for government-to-government collaboration and cooperation. There would be significant advantages and improvements to areas located inside and outside Death Valley National Park with the institution of this alternative. Improved communication and collaboration between the parties would likely result in greater opportunities to address resource needs in a cooperative manner. Tribal participation would also expand the interpretive perspectives developed for visitors.

Conclusion

There would be significant advantages and improvements to the condition of cultural resources with the implementation of the Preferred Alternative. Cooperative agreements considered by the Tribe, NPS, BLM, and USFWS would be subject to all applicable federal laws, executive orders, departmental guidelines, and bureau policies and practices. Any future developmental or program action undertaken as a cooperative activity/special use would be subject to an appropriate level of environmental review.

Cumulative Impacts

The Preferred Alternative could result in significant impacts to potentially eligible known or currently undiscovered cultural resources during future construction. There are no known federal plans to develop any of the federal lands affected by the Preferred Alternative, but some of the cultural resources potentially affected could be located on private lands. Future private development could further affect the integrity of some of these resources. It is presumed that degradation caused by erosion, casual collection, and deterioration to features is more likely to happen when placed in contact with people. Such sites could become less suitable for ethnographic uses as more people come near them. The significance and integrity of historical properties and cultural landscapes are also potentially subjected to inadvertent damage and site degradation by increasing contact with people.

4.2.2 No-Action Alternative

There would be no transfer-related impacts of the No-Action Alternative on cultural resources.

Conclusion

Impacts on cultural resources due to the No-Action Alternative are limited to possible disturbance of resources as a result of inadvertent damage or natural erosion and degradation.

4.3 WATER RESOURCES

4.3.1 Preferred Alternative

With implementation of the Preferred Alternative, it is anticipated that new land development, including residential and commercial uses, would be introduced on lands that possess surface drainage features. For most of the land transfer parcels, development could be conducted without substantial alteration to desert washes, springs, or other water bodies. Specific development proposals would be required to assess the full extent of effects to surface drainage features. Cooperative activities/special uses would include efforts to restore and enhance the function of springs within the Tribe's ancestral homeland through a cooperative agreement with BLM and NPS, and these are considered beneficial effects. Anticipated environmental consequences at parcels subject to development and cooperative activities/special uses are discussed below.

Furnace Creek

No discernable channels are present on the Furnace Creek Community Development parcel. Implementation of the Preferred Alternative would require minor drainage improvements around residential and commercial developments to divert sheet flow around the developed areas.

Availability of water and securing an allocation are subject to valid existing water rights of the NPS and AmFac, Inc., the landowner and operator of the Furnace Creek resort properties. Anticipated annual use of water at this site is projected to be 92 acre-feet per year.

Evolving technology and conditions associated with the Furnace Creek Wash water resources and water rights provide the accommodation of proposed rights for Tribal needs at Furnace Creek. Recent adoption of water conservation measures by AmFac Inc. and NPS have resulted in substantial water resource savings that would be returned to the environment. Under the terms of an agreement between AmFac, Inc. and NPS, AmFac is allowed to purchase any excess water produced by the collection system. The sale of that quantity of water is no longer needed by AmFac, Inc. to sustain its operations, resulting in additional savings from which Tribal water requirements could be provided. It is anticipated the water returned to the environment would be used to restore a large percentage of the former extent and vigor of natural wetlands and associated riparian vegetation in the Furnace Creek Wash area of the Park.

Indian Rancheria

No development is identified for the parcels to be acquired and transferred under the Preferred Alternative. Water supplies are anticipated to be adequate to serve limited residential uses if proposed on the Rancheria parcels.

In the event that the parcels are purchased at a future date, future development would be subject to an appropriate level of environmental review.

Death Valley Junction

Implementation of the Preferred Alternative is anticipated to include residential and commercial development on this 1,000-acre parcel. Existing development is protected from flooding by sheet flow by a series of levees oriented northeast and southeast in a "V" pattern outward from California State Route 190, west of California State Route 127. It is anticipated that commercial development as described in Chapter 2.0 would be located inside the levee area, close to State Route 190 or 127. Residential uses would be located farther out from the road. Two defined channels are present on the site directly north of

the existing town site and landing strip, west of State Route 127 and south of State Route 190. Development in this area could impact (i.e. result in discharge of fill into) waters of the United States in these channels. Mechanical manipulation within waters of the U.S. would require a U.S. Army Corps of Engineers (USCOE) Section 404 permit.

Water is available from the upper valley-fill aquifer at the site. The amount required to meet the Tribe's needs is 15.1 acre-feet per year. This volume would support several residences and a small commercial economic development. Groundwater withdrawals from wells completed in this aquifer would ultimately result in reduction of evapotranspiration, i.e. the loss of native vegetation, from adjacent areas. Groundwater withdrawn from wells completed in the deep bedrock aquifer(s) would likely capture water destined for springs or other discharge areas within Death Valley. Monitoring procedures designed to provide early warning detection of potential adverse impacts on srings or other discharge areas within Death Valley would be needed to ensure adverse effects on Park water and water-dependent resources are avoided. The water quality is considered marginal. Treatment of water for domestic consumption would likely be required.

Centennial

Residential development on this parcel could require crossing from one to several desert washes that conduct surface flows into and through the parcel from the south and west. Residential uses are anticipated to be sited outside of these washes. Depending on the precise locations of residences and access routes, several channels may need to be crossed. Crossings would be expected to be at-grade, and could be subjected to flooding during high runoff events.

~~Water is available to the parcel from surface water sources (at Black Rock Springs, south of the parcel) and groundwater (an exploratory well, which encountered water, was installed approximately 1 mile north of the parcel boundary). Concerns have been raised that substantial withdrawals of water from the Centennial Flat area could adversely affect water supply to wells in the town of Darwin, approximately 5 miles east of Centennial Flat. Geologic and hydrologic data do not support this assertion, but adverse effects on groundwater availability at Darwin cannot be precluded without assessment of aquifer boundaries, production capacity, and water quality. Small-scale withdrawals associated with limited residential uses would not be expected to adversely affect supplies at Darwin.~~

There are no surface water resources on the Centennial parcel. Nearby surface water resources include Black Rock Springs, approximately four miles from the parcel. An exploratory well for groundwater was drilled approximately one mile north of the parcel in November 1999.

The nearest community to the Centennial parcel is the town of Darwin, approximately five miles east of the Centennial parcel. This community relies exclusively on water supplied from Coso Springs, which flows in a pipeline to the town. The spring located on China Lake Naval Air Station is approximately seven miles southwest of the town. There are wells present in the vicinity of Darwin, but none of these produce water for use by town residents.

A technical report (HLA, July 2000; Appendix V) evaluated the potential relationship between groundwater at Centennial Flat and springs in the Coso and Argus Ranges south and east of Centennial Flat. The Technical Report concluded that geological conditions between the spring complex in the mountain south and east of the Centennial parcel made a hydrological connection between these areas very unlikely.

Subsequent testing of the exploratory well by BOR at Centennial Flat did not reveal the presence of a water table at the well site. These results indicate that groundwater resources at the Centennial parcel are not adequate to support transfer of property. (Appendices R and W.)

Scotty's Junction

Existing surface flows are collected from sheet flow and three defined channels on Sarcobatus Flat north of the 1,000-acre parcel into a flood control channel north of and parallel to Nevada State Route 267. From there, surface flows are discharged into culverts, which empty into a series of shallow north-south trending washes south of the road. It is anticipated that commercial development would be located near U.S. Highway 95, east of the identifiable channels. Residential development would likely be located more toward the interior of the parcel. Implementation of the Preferred Alternative could necessitate either fill or grading for road crossings in the southwestern quarter of the site, where some channels appear to qualify as waters of the U.S. Channels are generally over 1 foot deep and up to 12 feet wide.

Concern for the amount of water needed for development at this site may influence the type and intensity of development on this parcel. Estimates of water available in the valley-fill aquifer and from the underlying bed-rock aquifers in the Sarcobatus Flat hydrographic basin vary. These estimates would allow for withdrawals ranging from nearly 1,000 acre-feet per year to nearly nothing in terms of sustainable yield. NPS has expressed concern over effects of withdrawals from the upper valley-fill and bedrock aquifers located east of Death Valley National Park on water resources in the Park and attendant effects on riparian and aquatic communities.

The effect of any additional development of groundwater on Park water rights and related resources is uncertain. The projected annual volume of water needed at this site, 375.5 acre-feet, is considered to be available in the upper valley-fill aquifer. Groundwater withdrawals from wells completed in this aquifer will ultimately result in the reduction of evaportranspiration, i.e. the loss of native vegetation, from adjacent areas. Groundwater withdrawn from wells completed in the underlying bedrock aquifer(s) would likely capture water destined for springs or other discharge areas within Death Valley. Monitoring procedures designed to provide early warning detection of potential adverse impacts on springs or other discharge areas within Death Valley would be needed to ensure adverse effects on Park water and water-dependent resources are avoided.

Lida Community Parcel and Lida Ranch

It is anticipated that new development would be constructed only on the Lida Community parcel and would consist of residences and a small-scale roadside commercial establishment. Ranching operations would continue on the Lida Ranch parcels. Residential development would be expected to occur along existing interior roads of the Lida Community parcel north of Nevada State Route 266. Several well-defined ephemeral stream channels drain the south slopes of the Palmetto Mountains in this area. Minor drainage improvements or flood protection measures may be required to protect residences. A convenience store or other small-scale commercial enterprise could be located along State Route 266 west of the existing community of Lida. An ephemeral stream with attendant riparian zone occurs along the south side of State Route 266. Development in this area would require flood protection measures and could require fill in waters of the U.S. Moreover, any future development would be subject to the appropriate level of environmental review.

Water at these parcels is limited and could affect the scale of residential development. The Preferred Alternative allows for the purchase of appurtenant water rights to Lida Ranch. The available water supply for these parcels in estimated at up to 15 acre-feet per year, but may be substantially less. Available water supply could affect the intensity of residential development at the Lida Community parcel.

Cooperative Activities/Special Use Areas

Implementation of the Preferred Alternative would include activities at and surrounding springs and streams within the ranges of the Tribe's ancestral homeland. These activities could include vegetation management and manipulation. Specific activities would depend on the nature of cooperative agreements entered into between the Tribe and BLM. Restoration of springs and management of exotic plant species (i.e., tamarisk) would result in improved surface flows in the spring systems. Activities at springs could be constrained by nesting birds during spring and early summer.

Conclusion

The Preferred Alternative could involve the discharge of fill into waters of the U.S., regulated under the Clean Water Act of 1972. This impact is considered largely avoidable, if site-specific plans are developed to avoid areas that would qualify as waters of the U.S. Jurisdictional delineations, confirmed by the U.S. Army Corps of Engineers would be required to determine the extent of waters of the U.S. and other special aquatic sites. Moreover, cooperative agreements considered by the Tribe, NPS, BLM, and USFWS would be subject to all applicable federal laws, executive orders, departmental guidelines, and bureau policies and practices. Any future developmental or program action undertaken as a cooperative activity/special use would be subject to an appropriate level of environmental review. A lack of a sustainable groundwater supply renders the Centennial parcel unsuitable for transfer. The legislation in its current form (September 2000) directs the Secretary of Interior to identify a parcel with an adequate supply of water within two years. Should a parcel with an adequate water supply be identified, it will be subject to an environmental review. Assuming the identified parcel is on BLM land, BLM would be the lead agency for that review.

Cumulative Impacts

Future, as yet to be identified development in the region (~~mining,~~ residential and commercial) could alter surface water resources in Death Valley in the future and new projects could introduce fill into waters of the U.S. Alteration of surface waters to accommodate development may occur on lands to be transferred in trust to the Tribe. For cooperative activities/special uses, beneficial effects would be expected. Introduced exotic plants, fire suppression, and other human activities have altered the character of many of the springs in the Mojave Desert. Tribal participation in the cooperative activities/special uses related to restoration and management of streams and spring would serve to enhance the character and flow characteristics of these water bodies, helping to repair and improve hydrologic and biological conditions.

4.3.2 No-Action Alternative

There would be no requirement for drainage improvements or potential fill in waters of the U.S. under the No-Action Alternative. The existing environmental conditions would continue. There would be no cooperative activities at springs or in stream channels. Water uses associated with future development would not occur. Existing water resources would be distributed as they are currently.

Conclusion

The No-Action Alternative would not entail any adverse impacts to surface water hydrology. At the same time, the potential benefits of restoration and management of surface water resources in Death Valley National Park and elsewhere in the Timbisha Shoshone Tribe's ancestral homeland would not be realized.

4.4 SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE

4.4.1 Preferred Alternative

Implementation of the Preferred Alternative would generate many socioeconomic effects. On a general basis, development at lands to be transferred could generate the need for additional services such as policing, fire suppression, and emergency medical services. The Preferred Alternative would remove approximately 7,240 acres of lands from existing BLM ownership, resulting in a small decline in revenues paid by BLM to counties in California (Inyo) and Nevada (Nye and Esmeralda).

The proposed transfer of land into trust is in accordance with Executive Order 12989, which requires federal agencies to incorporate environmental justice into their missions by identifying and addressing disproportionately high and adverse human health or environmental effects of their programs and policies on minorities and low-income populations and communities. The proposed transfer of land into trust would have no such adverse effects. All effects are currently anticipated to be positive. They are as follows:

- The actions proposed in the Preferred Alternative would not result in any identifiable adverse human health effects. Therefore, there would be no direct or indirect negative or adverse effects disproportionate to any minority or low-income populations or communities.

- The impacts on the natural and physical environment that occur due to implementation of the Preferred Alternative would not significantly or otherwise adversely affect any minority or low-income population or community.

- NPS and BLM have an active public participation program and have considered all public comments regardless of age, race, income status, or other socioeconomic or demographic factors.

- Consultations were conducted with Native Americans, and no negative or adverse effects were identified that disproportionately or otherwise adversely affect these minority groups.

Impacts on the socioeconomic environment from the alternatives would be minor in the immediate future and would be confined mostly within the local and regional geographic area. As development plans are formulated it is possible that positive effects to the Tribe's socioeconomic environment would be realized. These impacts would not occur at any one time but would be spread over a number of years. Impacts to the socioeconomic environment are not expected to significantly alter the physical and social structure of the nearby communities and are anticipated to have a positive impact on the Timbisha Shoshone Tribe.

Although the specific project actions are not yet definite, any attempt to estimate the potential for disproportionately high and adverse human health or environmental effects on specific population segments would be speculative at this time. Given the close similarity of the population composition and other socioeconomic characteristics between the three counties, it is unlikely that any population or community would experience any project-related social or economic effects in a disproportionate manner.

A major social benefit of the Preferred Alternative is the ability of the Tribe to live on their own lands in modern communities, with access to locations of traditional use and association within the Tribe's ancestral homeland. The primary economic benefit of the Preferred Alternative is the establishment of a land base for the Timbisha Shoshone Tribe, providing opportunity for tribal members to receive land-based government assistance and to develop economic ventures. These ventures will increase employment rates and incomes among Tribe members, and generate revenues in the Park and local communities outside the Park by the purchase of goods and services. A discussion of socioeconomic

effects concerning lands proposed land transfers, acquisition and transfer, and cooperative activities/special uses follows:

Furnace Creek

The Preferred Alternative would allow for the development of a planned Community Development parcel on 314 acres adjacent to Furnace Creek Ranch. These lands are historically significant to the Tribe. The Community Development parcel would become a tribal gathering place and a center for tribal business and operations. Economic development including a museum, gift shop, and lodging would bring economic benefit to the Tribe. The demand for additional lodging in the Furnace Creek area is undetermined but it is anticipated that additional lodging in the Park would be economically viable.

Additional commercial development in the Park would incrementally increase the demand for public services and supplies, police and fire services, and infrastructure requirements (telephone, electrical power, water supply, and wastewater treatment and disposal). Water and wastewater would be incorporated into the Park's system. Other required services, with the exception of police services, would be the responsibility of the Tribe, either to provide for themselves or to contract with local providers (i.e., medical services).

Indian Rancheria

Implementation of the Preferred Alternative would appropriate funds for acquisition for two parcels of land. These parcels were historically occupied by tribal families until the 1920s. The acquisition of these parcels would add to the Tribe's land base and have the social benefit of returning to the Tribe land to which they have a strong association. Limited economic activities are anticipated at the Rancheria parcels. The level of use is envisioned to be residential with limited agricultural use at approximately the same level that has existed in the past.

Death Valley Junction

Limited residential and commercial development could occur on this parcel. Residential uses would generate an incremental local increase in demand for public services and supplies. Commercial uses of the parcel could generate revenue for the Tribe and provide opportunities for employment and enhanced revenue. Economic ventures in the form of lodging or a retail convenience or gift store would generate income for the Tribe, some of which would return to the local community by consumptive purchasing.

Additional commercial and residential development at Death Valley Junction would incrementally increase the demand for public services and supplies; police, fire and medical services; and infrastructure requirements (telephone, electrical power, water supply, and wastewater treatment and disposal). Other required services, with the exception of police services, would be the responsibility of the Tribe, either to provide for themselves or to contract with local providers (i.e., medical services).

Centennial

Under the Preferred Alternative, the Centennial parcel ~~e~~would likely be used for residential, and possibly for small-scale commercial economic activities. The distance of this parcel from State Route 190 would make economic development difficult and carry some risk, if it were to be focused on travelers.

Residential uses at this location would generate a negligible demand for public services and supplies; or police, fire, and emergency medical services; and water supply. Other required services, with the

exception of police services, would be the responsibility of the Tribe, either to provide for themselves or to contract with local providers (i.e. medical services).

Scotty's Junction

Under the Preferred Alternative, residential and commercial development would occur at this parcel. The land on Sarcobatus Flat is part of the Tribe's history, and this area could serve as a primary community for much of the tribal population. This parcel has frontage along State Route 267 and U.S. Highway 95, making it suitable for a variety of economic activities. Several residences and a small market are located on adjacent lands.

Additional commercial and residential development at Scotty's Junction would incrementally increase the demand for public services and supplies; police, fire, and medical services; and infrastructure requirements (telephone, electrical power, water supply, and wastewater treatment and disposal) in the local area. These services (including police services in Nevada) would be either provided by the Tribe or contracted out to local providers.

There is an existing Class II-solid waste landfill in the town of Beatty, Nye County, Nevada. Because this landfill serves primarily the local Beatty area, traffic associated with landfill activity would not be expected to adversely affect uses at Scotty's Junction. The landfill is approximately 40 miles southeast of the Scotty's Junction parcel.

Lida Community Parcel and Lida Ranch

Limited residential and small-scale economic development would occur on the Lida Community parcel. Lida Ranch would be expected to continue ranching operations similar to current activities on the parcel. These parcels are adjacent to the proposed area for cooperative activities/special uses at Lida Summit. In the event that the parcels at Lida Ranch are purchased at a future date, any future development would be subject to an appropriate level of environmental review.

Additional commercial and residential development at the Lida Community parcel would incrementally increase the demand for public services and supplies; police, fire, and medical services; and infrastructure requirements (telephone, electrical power, and water supply) in the local area. These services (including police services in Nevada) would be either provided by the Tribe or contracted out to local providers.

Cooperative Activities/Special Use Areas

Cooperative activities would help achieve tribal cohesion by allowing access to areas constituting major elements of Timbisha Shoshone history and tribal practice. Ceremonial activities, food and medicinal plant gathering, and participation in the management of NPS and BLM resources will serve to unite the Tribe and incorporate the tribal perspective into visitor experiences at Death Valley National Park.

Conclusion

A major reason for the proposed legislation is to achieve social and economic benefits for the Tribe as described in the *Secretarial Report*. These would benefit the Tribe, and for revenue-generating activities, would benefit communities, counties, and businesses in the region through consumptive purchases. ~~There would be a minor negative economic effect from the loss of annual revenues from lands transferred from BLM.~~ Allocation of limited water resources to the Tribe may limit development in other areas, by making water unavailable for allocation.

Cumulative Impacts

Cumulative effects on the socioeconomic environment are difficult to predict. Development and economic activity tends to be spread over large distances in the Mojave Desert. The United States government is a major landholder. The availability of water and limitations on the potential for economic development on federal lands is part of the existing environment, and expected to continue. The land transfers, acquisition and transfers, and cooperative activities/special uses described in this proposal would not be expected to contribute substantially to cumulative future socioeconomic conditions.

4.4.2 No-Action Alternative

Under the No-Action Alternative, land transfers, attendant development, and demand for goods and services would not occur. Transfer- or cooperative activity/special use-related effects to the socioeconomic environment would not occur.

Conclusion

Under the No-Action Alternative, social and economic benefits to the Tribe would not occur and the major objective of the *Secretarial Report* would not be met. The Tribe would continue without a land base, with very few opportunities for economic gains or tribal self-determination.

4.5 LAND USE, RECREATION, AND WILDERNESS

4.5.1 Preferred Alternative

Furnace Creek

Implementation of the Preferred Alternative would improve residential land uses at Death Valley National Park by allowing development of modern housing with up-to-date infrastructure and construction. Commercial uses within the Park will be consistent with tribal and Park values, needs, and purposes. Tribal presence in the Park will add to the historical context of visitors' experiences of Death Valley and the surrounding region of the Mojave Desert.

Indian Rancheria

~~Specific land uses are not identified for the Indian Rancheria parcels.~~ The level of use is envisioned to be residential at approximately the same level that has existed in the past, which included family residents and limited agricultural uses. In addition, there may be a small joint NPS/Tribal office for visitor information and resource management for the Saline Valley portion of the Park. In the event that the parcels are purchased at a future date, any future development would be subject to the appropriate level of environmental review. Furthermore, residential uses would be consistent with historical uses at these parcels. ~~Tribal contribution to management of the springs is discussed under the "Cooperative Activities/Special Uses" section below.~~

Death Valley Junction

Existing uses on lands surrounding this parcel include open space, residential, an airstrip, and the Amargosa Opera House. Implementation of the Preferred Alternative would allow limited commercial and residential uses of the parcel. These uses would be considered consistent with existing uses.

Centennial

Existing uses at the parcel consist of cattle grazing. Mining operations are ongoing at nearby locations in the Coso Mountains. Implementation of the Preferred Alternative would likely result in very low-density residential use of the parcel. Military overflights from China Lake Naval Air Weapons Station may introduce occasional brief but loud noise conditions to residents on the Centennial parcel.

Scotty's Junction

This parcel is designated by BLM with a multiple-use classification. The anticipated uses would include residential and commercial uses, with commercial uses sited primarily along the highways. These uses would be consistent with existing designations. Specific consequences of development would depend upon the nature and intensity of use. Development proposals would be subject to an appropriate level of environmental review, and would be subject to laws, codes, regulations, and policies governing activities on the land.

Lida Community Parcel and Lida Ranch

Anticipated uses of the Lida Community parcel include residential and small-scale economic development, possibly a convenience store along State Route 266. No retail stores are present within a 50-mile radius of the site. The anticipated uses would be consistent with existing uses in the nearby Town of

Lida, Nevada. Ranching operations would continue on the Lida Ranch parcels with implementation of the Preferred Alternative.

Cooperative agreements considered by the Tribe and BLM would be subject to all applicable federal laws, executive orders, departmental guidelines, and bureau policies and practices. Any future developmental or program action undertaken as a cooperative activity/special use would be subject to an appropriate level of environmental review.

Cooperative Activities/Special Use Areas

Cooperative activities/special uses would include access for purposes of ceremonial uses, camping, and the gathering of food and medicinal plants in designated Wilderness Areas of Death Valley National Park and on BLM lands. The range of these activities and their timing will be negotiated between the Tribe and the federal agencies. The *Secretarial Report* specifies that agreements be negotiated that meet both tribal and Park values, needs, and purposes. Tribal contributions to management of resources on NPS, BLM, and USFWS Fish and Wildlife lands would be expected to assist the respective agencies in achieving management objectives and would also enhance the experience of visitors.

Cooperative agreements considered by the Tribe and BLM would be subject to all applicable federal laws, executive orders, departmental guidelines, and bureau policies and practices. Any future developmental or program action undertaken as a cooperative activity/special use would be subject to an appropriate level of environmental review.

Public access would not be eliminated to any land areas that are selected for cooperative agreements.

Conclusion

Specific development plans would be required to evaluate the consistency of proposed land uses with applicable plans and policies. The anticipated types and levels of development may be subject to limitation by the availability of critical resources such as water.

Public access would not be eliminated to any land areas that are selected for cooperative agreements.

Cumulative Impacts

Owing to the unique nature of cooperative activities/special uses, no projects of a similar nature are anticipated. Additional efforts at restoration undertaken by NPS and BLM would add to the beneficial contributions of the Tribe to the management of biological and cultural resources.

4.5.2 No-Action Alternative

Under the No-Action Alternative, lands would not be transferred or acquired and cooperative activities would not be undertaken. Neither the Tribe nor the United States would achieve the objective of establishing a land base for the Timbisha Shoshone Tribe.

Conclusion

The No-Action Alternative would allow the continuation of existing conditions. The objective of establishing a Timbisha Shoshone tribal homeland would not be met.

4.6 VEGETATION

The Preferred Alternative assumes that some loss of plant communities would occur as a consequence of conversion to a developed condition. Lands identified for transfer were reviewed for biological constraints, including special-status plant species and sensitive plant community types. Areas known to support sensitive resources have been largely avoided, but the potential exists for special-status plant species to occur at several locations, subject to verification by focused surveys during the appropriate seasons. Loss of habitat for special-status species is considered a direct, adverse effect of the Preferred Alternative. Drawdown of groundwater upgradient of lands supporting desert riparian plant communities would be considered an indirect effect, but is not quantifiable without specific development plans ~~(including water use)~~ and adequate information on aquifer flow systems to predict downgradient effects. Identified potential environmental consequences for lands proposed for transfer, acquisition and transfer, and cooperative activities/special uses are described below.

4.6.1 Preferred Alternative

Furnace Creek

Implementation of the Preferred Alternative would entail alteration of existing vegetation, including landscaped, disturbed, and saltbush scrub plant communities within the Community Development parcel. Loss of native plant communities is considered an adverse impact. The loss is estimated at 50 acres of the 314-acre Community Development parcel, of which approximately 30 acres is in either a disturbed/natural or landscaped condition. This effect is considered minor in terms of the overall extent of the affected plant community types in the Mojave Desert and in the Furnace Creek area. Plant communities considered sensitive or supporting sensitive plant species would not be subject to conversion. Further, tribal management and restoration of the Tribal Mesquite Use Area (Cooperative Activity/Special Use area) would serve to enhance the quality of this area, which is considered a sensitive plant community.

Indian Rancheria

~~No specific development is anticipated at the Indian Rancheria.~~ The level of use is envisioned to be residential at approximately the same level that has existed during earlier tribal occupation. Should residential uses be proposed, it is expected that they would occur on previously disturbed lands. In the event that the parcels are purchased at a future date, any future development would be subject to an appropriate level of environmental review.

Death Valley Junction

The Preferred Alternative would entail modification of existing plant communities consisting of sparse creosote bush scrub and shadscale scrub associations. No special-status species have been observed on the site and none are recorded as occurring here. There is a moderate potential for a possibly special-status plant species (golden carpet, *California Native Plant Society List 1B*) to occur on this parcel. Direct loss of special-status plant species or indirect loss through modification of suitable habitat would be an adverse impact of the Preferred Alternative. Confirmation of the presence or absence of special-status plant species when a specific development proposal is brought forward would be required to make a precise determination of effect.

Centennial

Implementation of the Preferred Alternative would entail minimal surface disturbance in Joshua tree woodland and Mojave mixed woody scrub plant associations. No special-status plant species have been observed or recorded on the parcel. The removal of a small area of native plant community is considered a minimal impact to these extensive plant communities.

Scotty's Junction

At full development in the future this parcel could be subject to disturbance of up to 20 percent (560 acres) of existing native plant communities on the 2,800-acre parcel, depending upon other potentially limiting environmental factors. The parcel is vegetated with shadscale scrub and scattered creosote bush at the upper (northern) end. No special-status plant species have been observed or are recorded as occurring on this parcel.

Lida Community Parcel and Lida Ranch

With implementation of the Preferred Alternative, residential uses would involve minor disturbance in ~~piñon~~pinyon-juniper woodland and Great Basin sagebrush communities, primarily on the Lida Community parcel. Up to three special-status plant species have a moderate likelihood of occurrence on these parcels, representing a potentially adverse impact. It is anticipated that the small commercial activity would be sited on disturbed land adjacent to State Route 266. Actions at Lida Ranch are anticipated to occur within existing disturbed or ruderal habitats.

Cooperative Activities/Special Use Areas

The Preferred Alternative would allow tribal access to BLM and NPS lands for purposes of carrying on traditional tribal activities including the gathering of ~~piñon~~ pinyon nuts, collection of food and medicinal plants, use of springs, and participation in management and maintenance activities at springs, streams, and mesquite groves. These activities would not be expected to result in adverse impacts to native plant communities or special-status plant species. Plant community conditions, including those that provide habitat for special-status species, would improve with careful management.

Cooperative agreements considered by the Tribe and BLM would be subject to all applicable federal laws, executive orders, departmental guidelines, and bureau policies and practices. Any future developmen~~tal~~ or program action undertaken as a cooperative activity/special use would be subject to an appropriate level of environmental review.

Conclusion

Implementation of the Preferred Alternative would include activities with both adverse and beneficial effects. Loss of habitat for special-status plant species if it were to occur would be considered adverse. Potential benefits to plant communities and habitat for special-status species would be expected to occur with development of cooperative agreements for identified areas.

Cumulative Impacts

Future developments in the Mojave Desert are expected to result in conversion of Mojave Desert plant communities. Mining proposals in California and Nevada, as well as future planned developments such as

the planned Science and Technology Corridor in Nye County, Nevada; economic development at the Nevada Test Site; and population growth in Pahrump, Nevada, may reduce the overall acreage of some plant community types in the region. Water withdrawals (surface and groundwater) in California and Nevada would likely reduce flows at downgradient springs in the region. Continuing efforts by BLM and NPS to manage wild horse and burro herds would be expected to improve the condition of many Mojave Desert plant communities. Development at transferred lands would incrementally contribute to identified adverse effects.

4.6.2 No-Action Alternative

Under this alternative, proposed land transfers, acquisitions and transfers, and cooperative activities/special uses would not occur. Existing conditions would be expected to continue for the indefinite future, although development of lands identified as suitable for disposal would not be precluded from future development. Impacts to plant communities associated with development at lands to be transferred would not occur. Anticipated benefits to springs and riparian areas would not occur.

Conclusion

There would be no adverse or beneficial effects to plant communities and special-status plant species under the No-Action Alternative.

4.7 WILDLIFE

The Preferred Alternative assumes that some loss of habitat for wildlife associated with Mojave Desert plant communities would occur as a consequence of development. Lands identified for transfer were reviewed for biological constraints, including records of special-status animal species and habitats for these animals. These areas have been largely avoided, but the potential exists for special-status wildlife to occur at several locations, subject to verification by focused surveys during the appropriate season. ~~Three of the parcels proposed for transfer are located in part within Wild Horse Herd Management Areas (Death Valley Junction, Scotty's Junction, and Centennial).~~ The Death Valley Junction parcel is located in the Chicago Valley Herd Management Area (HMA); the Centennial parcel is located in the Centennial HMA; and the Scotty's Junction parcel is located entirely within the Palmetto HMA. Loss of habitat for special-status wildlife would be considered a direct, adverse effect of the Preferred Alternative. Drawdown of groundwater upgradient of lands supporting desert riparian plant communities and reducing the availability of surface water for wildlife use would be considered an indirect effect, but is not quantifiable without specific development plans (including water use) and adequate information on aquifer flow systems to predict downgradient effects. Identified potential environmental consequences for lands proposed for transfer, acquisition and transfer, and cooperative activities/special uses are described below.

4.7.1 Preferred Alternative

Furnace Creek

Implementation of the Preferred Alternative at the Furnace Creek Community Development parcel would result in the conversion of up to 50 acres of saltbush scrub, ruderal, and landscape plant communities with attendant loss of associated wildlife habitat. No special-status wildlife species are associated with these plant communities. Indirect impacts are associated with a potential reduction in surface water in Furnace Creek and Salt Creek. This effect is not quantifiable, but could affect habitat quality and extent for up to three special-status wildlife species, including one fish and one aquatic invertebrate associated with riparian areas at Furnace Creek. Conservation measures and system upgrades being implemented by the Park and AmFac Inc. are expected to result in a net decrease in withdrawal, with a corresponding increase in surface waters in local riparian habitats.

Indian Rancheria

~~Development has not been identified for the Indian Rancheria private parcels.~~ The level of use is envisioned to be residential at approximately the same level that has existed in the past, which included family residents and limited agricultural uses. In addition, there may be a small joint NPS/Tribal office for visitor information and resource management for the Saline Valley portion of the Park. In the event that the parcels are purchased at a future date, any future development would be subject to the appropriate level of environmental review. If development occurs, it would likely consist of residences on previously disturbed lands. No direct impacts to plant communities and associated wildlife habitats would be anticipated.

Death Valley Junction

The Preferred Alternative would result in an incremental (estimated at 50 acres) reduction of shadscale scrub plant community and its associated wildlife habitat values. Shadscale scrub is an abundant and widespread plant community in the Mojave Desert.

Within the geographic region of Death Valley Junction, several special-status wildlife species may use habitat on the parcel for foraging or roosting, either as residents or migrants. There is a low probability

that desert tortoise occurs on the parcel, and none have been observed (Appendix Y.) Development at Death Valley Junction would occur within the Chicago Valley Wild Horse Herd Management Area, but would not substantially interfere with movement of the herd. No federally listed species have been identified as occurring at this location, and none were observed. Several species considered significant under California law could occur here. The Amargosa vole, a federally endangered species, could occur here based on nearby observational records, but suitable habitat was not observed on the parcel.

Centennial

Several special-status wildlife species have the potential to occur in habitats associated with Joshua tree woodland and Mojave woody desert scrub plant communities. No federally listed animals were observed or have been recorded at this location, although records exist for several species nearby in the Coso Mountains. The Centennial Wild Horse Herd Management Area extends across the parcel.

Of particular concern is the ~~potential~~ observed presence of the Mohave ground squirrel, a federal species of concern, listed as endangered under the California Endangered Species Act (Appendix X.) Suitable habitat for this species is present and the Centennial Flat area represents the approximate northern extent for this species' range. Habitat quality for the Mohave ground squirrel ranges from marginal at the northern end of the Centennial parcel to relatively good quality in Joshua tree woodland at the southern end. ~~Presence or absence could not be evaluated in the time frame of this analysis, because this species is dormant (hibernates) from mid- to late summer until sometime from February to May, depending on weather and elevation.~~ The anticipated level of development at this parcel would not result in a substantial reduction in habitat for the species, although direct impacts are possible if grading or other site preparation actions occur in occupied habitat. ~~Seasonal surveys during the species' active period (May through July) would be required to confirm their presence or absence at the Centennial parcel.~~ Nelson's bighorn sheep are known from the general area, and are likely to traverse the parcel during migrations. Low-density residential development would not be expected to interfere with these movements. Other species of concern include mountain quail, chukar, mourning dove, Townsend's big-eared bat (California species of special concern), pallid bat (California species of special concern), as well as neotropical migratory songbirds. Low-density residential development would not be expected to impact wildlife resources associated with Black Rock Springs and other springs in the Coso Range.

Scotty's Junction

Implementation of the Preferred Alternative would result in a reduction in the extent of shadscale scrub and creosote bush plant communities and attendant wildlife habitat values on this 2,800-acre parcel. The extent of habitat loss is dependent upon the ultimate extent of development, which is in turn dependent upon other environmental limitations. Several special-status wildlife species could occur on this parcel, although none were observed (Appendix Z.) A low-density population of desert tortoise is recorded as occurring several miles south of the parcel on lower Sarcobatus Flat, and two sightings have been recorded south of the Scotty's Junction parcel but no evidence of their use of this parcel was observed. Use of an abandoned building by owls was noted. The parcel is within the boundaries of the ~~Gold Mountain Burro~~ Palmetto Herd Management Area, and development would incrementally decrease the area available for use by the herd. Nelson's bighorn sheep is recorded in the area.

Lida Community Parcel and Lida Ranch

Development of residential and small-scale economic activities at the Lida Community parcel would reduce available wildlife habitats associated with pinyon pine-juniper woodland and big sagebrush on the parcel. Nelson's bighorn sheep is expected to occur on the parcel.

Cooperative Activities/Special Use Areas

Habitat restoration and management activities would be expected to generally benefit wildlife by improving habitat quality. Restoration and management activities could adversely affect aquatic and avian species if management activities were conducted out of the appropriate season.

Conclusion

The reduction of wildlife habitat associated with future development on lands to be transferred is considered small in proportion to the abundance of those habitats in the region. The potential exists to adversely affect one or more special-status species, specifically, Mohave ground squirrel at the Centennial parcel. Development of the site, if feasible at all, would require consultation with California Department of Fish and Game to develop measures to avoid incidental take of this species.

Cumulative Impacts

Future developments in the region are expected to result in conversion of Mojave Desert plant communities and attendant wildlife habitat values. Private ~~M~~mining proposals in California and Nevada, as well future planned developments such as the planned Science and Technology Corridor in Nye County, Nevada, economic development at the Nevada Test Site, and population growth in Pahrump, Nevada, would reduce by a very small increment the available habitat in the region. Water withdrawals (surface and groundwater) in California and Nevada would likely reduce flows at downgradient springs in the region with the corresponding reduction in the availability of a resource critical to the survival of many vertebrate species. Development at transferred lands would incrementally contribute to these adverse effects.

4.7.2 No-Action Alternative

Under this alternative, proposed land transfers and cooperative activities would not occur. Existing conditions would be expected to continue for the indefinite future, although development of lands identified as suitable for disposal would not be precluded from future development. Impacts to wildlife associated with reduction in available habitat at lands to be transferred would not occur. Anticipated benefits to habitat values associated with management of springs and riparian areas would not occur.

Conclusion

There would be no adverse or beneficial effects to wildlife habitats and special-status wildlife species under the No-Action Alternative.

5.0 CONSULTATION AND COORDINATION

5.1 HISTORY OF PUBLIC INVOLVEMENT

The Department of the Interior (DOI), National Park Service (NPS), and Bureau of Land Management (BLM) published a Notice of Intent in the *Federal Register* on April 19, 1999. This notice informed the public of the availability of the *Secretarial Report* and provided background information on the subject lands.

The purpose of that scoping process was to assist the agencies in gathering public input that would shape the analysis in the National Environmental Policy Act (NEPA) document. In order to identify issues and concerns to be addressed in the environmental document six public meetings were held on:

- Monday May 24, 1999 in Pasadena, California (3 attendees)
- Tuesday May 25, 1999 in Ridgecrest, California (3 attendees)
- Wednesday May 26, 1999 in Lone Pine, California (29 attendees)
- Thursday May 27, 1999 in Goldfield, Nevada (12 attendees)
- Friday May 28, 1999 in Pahrump, Nevada (17 attendees)
- Monday July 12, 1999 in Ridgecrest, California (15 attendees)

A total of 79 citizens attended the six public meetings. The scoping period generated a rich array of comments that ranged across a wide spectrum of regulatory, socioeconomic, and environmental issues. The concerns, comments, and issues brought forward to BLM and NPS were presented as questions, requests, or statements that expressed an opinion or a combination of some or all of the above. Over 550 letters were received during the public scoping period. Comments were received online and by mail.

A Scoping Summary Document was prepared by BLM and NPS that summarizes the results of the public scoping process. The Scoping Summary Document was prepared to identify the issues that are directly related to resource management and the regulatory process that can be addressed by the agencies during the NEPA process. In October 1999, a copy of the 11-page Scoping Summary Document was mailed to everyone who attended the public meetings or commented during the scoping process.

A NOI to prepare an LEIS was published in the *Federal Register* in March 2000 and was circulated to local, state, and federal agencies and other interested parties.

The draft LEIS was the product of the activities described above. A series of public meetings were held in summer 2000 to obtain comments and further refine the LEIS. The LEIS was made available at the Death Valley National Park headquarters, BLM offices, and regional libraries. To better manage printing and mailing costs, the draft LEIS was distributed only to those responding to a mail-back inquiry in February 2000 updating the Death Valley National Park mailing list. The draft LEIS was also made available for review on the Internet at http://www3.iwvisp.com/blm/report.

A series of four public meetings were conducted in early June 2000 to discuss the draft LEIS with interested members of the public:

- Monday June 5, 2000 in Ridgecrest, California (20 attendees)
- Tuesday June 6, 2000 in Lone Pine, California (38 attendees)
- Wednesday June 7, 2000 in Goldfield, Nevada (11 attendees)
- Friday June 9, 2000 in Pahrump, Nevada (8 attendees)

While a number of topics were raised at each meeting, questions and statements predominately focused on the transfer of the Centennial parcel. Of particular interest were any potential impacts related to future development of the parcel and how that might affect the water supply for the community of Darwin, California.

The lead agency worked with the cooperating agencies to obtain their comments regarding the scope of the draft LEIS. (42 U.S.C. 4332(2)(C).) The draft LEIS contained all of the required contents specified in NEPA and disclosed and discussd all major points of view on the environmental impacts and alternatives. (40 C.F.R. 1502.9(a).)

After preparing the draft LEIS, the lead agency obtained the comments of other federal agencies with jurisdiction by law over, or special expertise with regard to, the Proposed Action, or agencies that are authorized to develop and enforce environmental standards. Such agencies are required to comment on the final LEIS. (40 C.F.R. 1503.1(a), 1503.2.)

The comment period of the draft LEIS was initially from May 19 through July 30. The comment period was extended twice: from July 30 through August 10; and from August 10 through August 21.

5.2 LIST OF PREPARES

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6.0 ACRONYMS AND GLOSSARY TERMS

A

ACEC. *See* **Area of Critical Environmental Concern.**

ACHP. *See* **Advisory Council on Historic Preservation.**

Advisory Council on Historic Preservation (ACHP). An independent agency created by the National Historic Preservation Act of 1966 that reviews federal funding, project, and permit cases where the federal government and the State Historic Preservation Officer (SHPO) are in disagreement on where adverse effects will occur to significant cultural properties. *See also* **National Historic Preservation Act of 1966**.

Affected environment. The existing biological, physical, social, and economic conditions of an area that are subjected to change, both directly and indirectly, as a result of a proposed human action.

Allotment. 1) An area of land designated and managed for grazing livestock. 2) A parcel of federal land provided for a specified group (e.g. Indian/Tribal allotment).

Alluvium. Geologic materials deposited by running water (e.g., streams, and rivers). The term applies to deposits of recent time that have not been consolidated and cemented into rock.

Alternative. Under the National Environmental Policy Act, a proposed action or set of actions to meet an objective. Alternatives are evaluated in terms of their environmental consequences in an Environmental Impact Statement.

Animal Unit Month (AUM). The amount of forage necessary for the sustenance of one cow or its equivalent for a period of one month.

Aquifer. An underground layer of earth, gravel, or porous stone that yields water.

Archeological resources. Any material remains or physical evidence of past human life or activities that are of archeological interest, including any record of the effects of human activities on the environment. Such resources are capable of revealing scientific or humanistic information through archeological research.

Area of Critical Environmental Concern (ACEC). Places within public lands where special management attention is required to prevent irreparable damage to and protect important historic, cultural, or scenic values; fish and wildlife resources; and other natural systems or processes, or to protect life and safety from natural hazards.

AUM. *See* ***Animal Unit Month***.

B

BIA. Bureau of Indian Affairs.

BLM. Bureau of Land Management.

BOR. Bureau of Reclamation.

C

California Desert Conservation Area (CDCA). A Bureau of Land Management program that provides for the managed use of desert public lands and resources to safeguard environmental, cultural, and aesthetic values.

California Desert Protection Act (CDPA) of 1994. Public Law 103–433, including Section 705(b) of the California Desert Protection Act of 1994, which directs the Secretary of the Interior, in consultation with the Timbisha Shoshone Tribe, to conduct a study to identify lands suitable for a reservation for the Timbisha Shoshone Tribe both inside and outside Death Valley National Park.

California Endangered Species Act (CESA). Legislation enacted in 1984 to protect floral and faunal species by listing them as "rare," "threatened," "endangered," or "candidate" and providing a consultation process for the determination and resolution of potential adverse impact to the species.

California Environmental Quality Act (CEQA). Legislation enacted in 1970 to protect the quality of the environment for the people of California through requiring public agencies and decision makers to document and consider the environmental consequences of their actions.

Caltrans. California Department of Transportation.

Candidate species. Plants and animals that have been studied and USFWS has concluded that they should be proposed for addition to the federal endangered and threatened species list. These species have formerly been referred to as Category 1 candidate species.

CCC. Civilian Conservation Corps.

CDCA. *See* **California Desert Conservation Area.**

CDPA. *See* **California Desert Protection Act.**

CEQ. *See* **President's Council on Environmental Quality.**

CEQA. *See* **California Environmental Quality Act.**

CESA. *See* **California Endangered Species Act.**

CFR. Code of Federal Regulations.

cfs. Cubic feet per second.

Clean Water Act (CWA). The Clean Water Act was originally enacted in 1972, and then amended in 1977, 1987, and 1990. The CWA sets out three goals: (1) the elimination of the "discharge of pollutants into navigable water" by 1985; (2) the establishment of waters with quality sufficiently high to be both "fishable and swimmable" by 1983; and (3) the end of "discharges of toxic pollutants in toxic amounts." (33 U.S.C.A. 1251(a).) The CWA regulates discharges to surface waters from all types of sources. Discharges to surface water are subject to the requirements of a National Pollutant Discharge Elimination System (NPDES) permit, which ensures that the water meets applicable standards at the point of discharge. The NPDES provisions are contained in Section 402 of the Clean Water Act.

CNDDB. California Natural Diversity Database.

CNPS. California Native Plant Society.

Conservation. (1) Cultural resource conservation involves efforts to manage or enhance cultural resources that have overriding scientific and historical importance and that are to be maintained in their present condition and protected from conflicting land or resource use. (2) Natural resources conservation involves efforts to manage or enhance biological communities to maintain or restore ecological function of the community; directed efforts to manage biological communities for the continued existence of target plant and/or animal species.

Cooperative agreements. Legal binding agreements between the Timbisha Shoshone Tribe and the National Park Service, Bureau of Land Management, or U.S. Fish and Wildlife Service for tribal access to and use of designated lands.

Cooperative activities. Activities within the Timbisha Shoshone ancestral homeland that are consistent with tribal practices and ensure resources inside and outside the Park are protected and enhanced.

Cooperating agency. An agency, other than the agency preparing the NEPA document (lead agency), that has jurisdiction over the proposal by virtue of law or special expertise and that has been deemed a cooperating agency by the lead agency. Under some circumstances, state or local governments and Native American tribes may be designated cooperating agencies.

Critical habitat. Any air, land, or water area, including elements thereof, that has been determined (and announced in the *Federal Register*) to be essential to the survival of wild populations of an endangered or threatened species or to be necessary for their recovery to a point at which the measures provided pursuant to the Endangered Species Act are no longer necessary.

Cultural landscape. A geographic area (including both cultural and natural resources and the wildlife or domestic animals therein) associated with a historical event, activity, or person or exhibiting other cultural or aesthetic values.

Cultural resources. Fragile and nonrenewable elements of the environment including archaeological remains (evidence of prehistoric or historical human activities) and sociocultural elements (sacred places, traditionally utilized raw materials, etc.) traditionally valued by ethnic groups.

Cumulative impacts. Those cumulative effects on the environment that result from the incremental effect of a proposed action when added to past, present, and reasonably foreseeable future actions regardless of what agency (federal or nonfederal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

CWA. *See* **Clean Water Act.**

D

DCP. Development Concept Plan.

DEIS. Draft Environmental Impact Statement.
DFG. California Department of Fish and Game.

Direct effect. An impact that occurs as a result of the propose action or alternative in the same place and at the same time as the action.

DOD. U.S. Department of Defense.

DOE. U.S. Department of Energy.

DOI. U.S. Department of the Interior.

Drainage. (1) Run off from precipitation. (2) A defined channel that carries runoff.

DWMA. Desert Wildlife Management Areas.

DWR. Department of Water Resources.

E

EIS. *See* **Environmental Impact Statement.**

Environmental Impact Statement (EIS). An analytical document prepared under NEPA that portrays potential impacts to the human environment of a particular course of action and its possible alternatives. An Environmental Impact Statement is prepared for use by the public, public agencies, and agency decision makers to weigh the environmental consequences of a proposed action. An EIS is different substantively and procedurally to a Legislative EIS. *See also* **LEIS**.

Endangered Species Act (ESA). Federal legislation enacted in 1973, as amended, that extends legal protection to plants and animals listed as "threatened" or "endangered" and includes consultation with United States Fish and Wildlife Service.

Endangered species. Any animal or plant species in danger of extinction throughout a significant portion of its range. These species are listed by the U.S. Fish and Wildlife Service.

Environment. The physical conditions that exist within an area that will be affected by a proposed project or alternative, including but not limited to land, air, water, minerals, flora, fauna, ambient noise, and objects of historical or aesthetic significance. The environment includes both natural and manmade conditions.

Environmental screening process. The analysis that precedes a determination of the appropriate level of NEPA documentation. A site visit, consultation with any agency with jurisdiction by law or special expertise, and the completion of a screening checklist are the minimum requirements of the environmental screening process. The process must be completed for all federal actions with the potential for environmental impact.

Environmentally preferred alternative. Of the action alternatives analyzed, the one that would best promote the policies in NEPA Section 101. This is usually selected by an interdisciplinary team. The President's Council on Envrionmental Quality encourages agencies to identify an environmentally preferred alternative in the final Environmental Impact Statement, but only requires it to be named in the Record of Decision.

Ephemeral stream. A stream or portion of a stream that flows only in response to precipitation. Such flow is usually of short duration.

Erosion. The wearing away of the land surface by running water, wind, ice, or other geological agents, including processes such as gravitational creep.

ESA. *See* **Endangered Species Act.**

Ethnographic resources. A site, structure, object, landscape, or natural resource feature assigned legendary, religious, subsistence, or other significance in the cultural system of a group with traditional association.

Evapo-transpiration. The process by which water is returned to the air through the combination of direct evaporation from surface water or soils and by transpiration of vegetation.

Exotic Species. Species that do not occur naturally in an area; non-indigenous.

F

Fauna. Animals of a particular region.

Federal Land Policy and Management Act (FLPMA). Public Law 94–579, October 21, 1976. Often referred to as the Bureau of Land Management "Organic Act," this act provides majority of BLM's legislative authority, direction, policy, and basic management guidance.

Flora. Plants of a particular region.

FLPMA. *See* **Federal Land Policy and Management Act.**

Future Development. For this document, Future Development is the possible future use of transferred parcels involving permanent structures or other improvements. Future Development is not examined in detail in this LEIS because, with the exception of some concept-level plans for Furnance Creek, the Tribe has not identified specific development for any of the transferred parcels.

G

GBUAPCD. Great Basin Unified Air Pollution Control District.

General Management Plan (GMP). A document incorporating goals, objectives and programs for the management of a park unit.

GMP. *See* **General Management Plan.**

Government to Government. A function of government in providing services to the public whereby two or more government agencies, acting in their government capacity, engage in common activities in which a memorandum of understanding would result.

GPM. Gallons per minute.

Groundwater. Water found beneath the land surface in the zone of saturation below the water table.

GSA. General Services Administration.

H

Habitat. The place where an animal or plant normally lives often characterized by dominant plant species and form, such as creosote bush scrub habitat.

Herd Management Area (HMA). Geographic units within desert areas that are managed for use by herds of wild horses and burros.

Herd Management Plan. Activity-level plans for wildlife habitat management. They are written in coordination with other resource plans and in accordance with a resource management plan.

Historic district. A geographically definable area, urban or rural, possessing a significant concentration, linkage to, or continuity of sites, landscapes, structures, or objects, that are united aesthetically by layout or physical developments or by past events. A district may also be composed of individual elements separated geographically but linked by association or history.

Historic site. The site of a significant event, prehistoric or historical occupation or activity, structure, or landscape whether extant or vanished where the site itself possesses historical, cultural, or archeological value apart from the value of any existing structure or landscape.

HMA. *See* **Herd Management Area.**

Homeland. The term Homeland in this document refers to the traditional ancestral homeland of the Timbisha Shoshone Tribe, that encompasses a vast territory of up to 11 million acres in the region of Death Valley, California, and extends into Western Nevada. The Homeland is the geographic area within which the Tribe has a historical relationship with the land, and is the area within which the Tribe has identified lands of particular historical, cultural, and economic interest. These lands were analyzed to determine if they were suitable to become trust lands.

Human environment. The human environment is defined by the President's Council on Environmental Quality (CEQ) as the natural and physical environment, and the relationship of people with that environment. Although the socioeconomic environment receives less emphasis than the physical or natural environment in the CEQ regulations, the National Park Service considers it to be an integral part of the human environment.

I

IGRA. *See* **Indian Gaming Regulatory Act.**

Impact topics. Specific natural, cultural, or socioeconomic resources that would be affected by the proposed action or alternatives (including no action). The magnitude, duration, and timing of the effect to each of these resources is evaluated in the impact section of an Environmental Impact Statement.

Indirect impact. Reasonably foreseeable impacts removed in time or place from the proposed action. These are "downstream" impacts, future impacts, or the impacts of reasonably expected connected actions (i.e., growth of an area after a highway to it is complete).

Indian Gaming Regulatory Act (IGRA). The Indian Gaming Regulatory Act contains a general prohibition of gaming on lands acquired by the Secretary of the Interior in trust for Native American tribes after October 17, 1988. (25 U.S.C. § 2719.)

Issues. In NEPA, "issues" are environmental problems that may occur if the proposed action or alternatives (including no action) are implemented or continue to be implemented.

J

Joint management plan. A plan concerning new management of natural resources established by two or more agencies or recognized entities.

Jurisdictional wetland. Areas meeting federal criteria as wetlands are subject to regulation under the Clean Water Act.

K

L

Lead Agency. The agency either preparing or taking primary responsibility for preparing the NEPA document.

LEIS. Legislative Environmental Impact Statement. An LEIS is an expedited version of the typical EIS process prepared on a timetable to ensure proper consideration in Congressional hearings and deliberations. Special rules apply to the preparation and review of an LEIS, pursuant to 40 C.F.R. 1506.8. *See also* **EIS.**

M

Major federal actions. Actions that have a large federal presence and have the potential for significant impacts to the human environment. Federal actions include: adopting policy; implementing rules or regulations; adopting plans, programs, and projects; ongoing activities; issuing permits; or financing projects completed by another entity.

MDAQMD. Mojave Desert Air Quality Management District.

Memorandum of understanding. A weekly binding agreement between two government agencies.

Mitigation. (1) A modification of the proposal or alternative that lessens the intensity of or avoids an impact to a particular resource. (2) A condition or measure, the implementation of which reduces, offsets, or eliminates an adverse effect of an action.

Multiple Use. (1) Management of public lands and their various resource values so that they are used in a coordinated manner that will best meet the present and future needs of the American people; (2) making the most judicious use of the land for some or all of these resources or related services over areas large enough to provide sufficient latitude for periodic adjustments in use to conform to changing needs and conditions; (3) the use of land for a portion of but not all of the available resources; (4) a combination of balanced and diverse resource uses that takes into account the long-terms needs of future generations for renewable and nonrenewable resources, including but not limited to recreation, range, timber, minerals, watershed, fish and wildlife, and natural scenic, scientific, and historical values; and (5) harmonious and coordinated management of the various resources without permanent impairment of the productivity of the land and the quality of the environment with consideration being given to the relative values of the resources and not necessarily to the combination of uses that will give the greatest economic return or the greatest unit output.

N

NAAQS. *See* **National Ambient Air Quality Standards.**

National Ambient Air Quality Standards (NAAQA). Legal limits on the allowable ambient levels of air pollution.

National Environmental Policy Act (NEPA) of 1969. Enacted on January 1, 1970, NEPA established a national policy to maintain conditions under which humans and nature can exist in productive harmony and fulfill the social, economic, and other requirements of present and future generations of Americans. It established the President's Council on Environmental Quality to coordinate environmental matters at the Federal level and to serve as advisor to the President on such matters. The law made all federal actions and proposals that could have a significant impact on the environment subject to review by federal, state and local environmental authorities.

National Historic Preservation Act (NHPA) of 1966. This act requires federal agencies to give consideration to historic properties determined to be significant (properties listed on or determined to be eligible for the National Register of Historic Places) prior to expending funding for, or authorizing or licensing a federal project or permit. It sets a procedure of consultation with the State Historic Preservation Officer (SHPO), as established by the act, and includes the establishment of the Advisory Council on Historic Preservation (ACHP). The ACHP is an independent agency that reviews those cases for which the Federal agency and the SHPO cannot come to an agreement, and those cases where adverse effects will occur to significant cultural properties. This consultation process is to assure significant cultural properties are not unnecessarily destroyed but are protected and considered to the extent possible and practical. NEPA requires agencies to include in their decision-making processes: (1) appropriate consideration of all environmental effects; and (2) procedures to avoid or minimize adverse effects; and restore and enhance environmental quality as much as possible.

National Register of Historic Places (NRHP). The comprehensive list of districts, sites, buildings, structures, and objects of national, regional, state, and local significance in American history, architecture, archeology, engineering, and culture maintained by the National Park Service under authority of the National Historic Preservation Act of 1966.

NDOT. State of Nevada Department of Transportation.

NDOW. State of Nevada Division of Wildlife.

NECO. Northern and Eastern Colorado Planning Effort.

NEMO. Northern and Eastern Mojave Planning Effort.

NEPA. *See* **National Environmental Policy Act.**

NHPA. *See* **National Historic Preservation Act.**

NOAA. National Oceanographic and Atmospheric Administration.

NOI. *See* **Notice of Intent.**
Notice of Intent (NOI). A notice submitted to the *Federal Register* that is used to notify other agencies and the public that an Environmental Impact Statement is being prepared.

NPS. National Park Service.

NRHP. *See* **National Register of Historic Places.**

NTS. Nevada Test Site.

O

Off-highway vehicles (OHV). Any motorized vehicle designed for cross-country travel over any type of natural terrain.

OHV. *See* **Off-Highway Vehicle.**

P

Park. Death Valley National Park, including any additions to the Park.

Petroglyph. A picture, design, or indentation carved, abraded, or pecked into a rock surface.

Pictograph. A figure or design painted onto a rock surface.

Plant communities. A regional assemblage of interacting plant species characterized by the presence of one or more dominant species. These assemblage plants live in a prescribed area or physical habitat.

Playa. The normally dry floor of a valley with closed surface drainage where water collects and evaporates. Also known as an alkali flat.

Preferred alternative. The alternative a National Park Service decision maker has identified as preferred at the final Environmental Impact Statement stage. It may be the same as the initial proposal or proposed action, or the environmentally preferred alternative, or it may be different. It is identified to aid the public in focusing its comments.

President's Council on Environmental Quality (CEQ). The National Environmental Policy Act created the CEQ, an agency of the President's office, to be the "caretaker" of NEPA.

Prior Appropriation Doctrine. *See* **Water Rights Appropriation Doctrine.**

Q

Quasi Appropriation-Riparian Doctrine. *See* **Water Rights Appropriation Doctrine.**

R

Rare species. A species that, although not presently threatened with extinction, is in such small numbers throughout its range that it may become endangered if its present environment worsens.

Recharge. Process by which water infiltrates and is added to an aquifer, either directly or indirectly by way of another rock formation. This term can also be used in reference to the water itself.

Record of Decision (ROD). A document that is prepared to substantiate a decision on a means of accomplishing a goal. A ROD (1) states what the decisions are, (2) identifies the alternatives considered

in reaching the decision and that were considered to be environmentally preferable, and (3) states whether all practicable means to avoid or minimize environmental harm from the alternative selected have been adopted. A goal can be such items as a project, plan, policy, or program.

Resource. A fragile and nonrenewable element of the environment.

Right-of-Way (ROW). The legal right of use, occupancy, or access across land or water areas for a special purpose or purposes.

Riparian area. An area of land directly influenced by permanent water. It has visible vegetation or physical characteristics reflective of permanent water influence. Lakeshores and streambanks are typical riparian areas. Excluded are such sites as ephemeral streams or washes that do not exhibit the presence of vegetation dependent upon free water in the soil.

RMP/EIS. Resource Management Plan/Environmental Impact Statement. A land use plan as described by the FLPMA; combined with a written analysis of the impacts on the environment caused by the plan.

ROD. *See* **Record of Decision.**

ROW. *See* **Right-of-Way.**

S

Scoping. Internal National Park Service preliminary analysis on issues, alternatives, mitigation measures, the analysis boundary analysis, appropriate level of documentation, lead and cooperating agency roles, available references and guidance, and defining purpose and need. External scoping is the early involvement of the interested and affected public.

SCS. U.S. Department of Agriculture, Soil Conservation Service.

Section 7 Consultation. Section 7 of the Endangered Species Act requires consultation with the U.S. Fish and Wildlife Service if the habitat of a threatened or endangered plant or animal may be affected by a federally authorized action.

Secretary. Secretary of the Interior or the designee of the Secretary.

Sensitive species. Plant and animal species occurring on public lands and requiring special management attention in order to protect them and in order to prevent irreparable damage to the important resources in category 3c in the *Federal Register*, Vol. 50, No. 188, September 27, 1985.

SHPO. *See* **State Historic Preservation Officer.**

Significant. A determination of the intensity of impact, in several contexts, of the proposed action or alternatives above a certain threshold.

Special-status species. Wildlife and plant species either federally listed or proposed for listing as endangered or threatened. *See also* **Candidate Species**.

Special use areas. Special use areas are lands, generally without specific boundaries, that would be used by the Timbisha Shoshine Tribe for traditional activities, ceremonies or contributions to land management

activities. Tribal activities in special use areas on public lands would be ubject to a cooperative agreement.

State Historic Preservation Office (SHPO). Established by the National Historic Preservation Act, the SHPO consults with federal agencies on the preservation of historic properties affected by federal funding, projects, or permits. *See also* **National Historic Preservation Act of 1966.**

Surface water. Water found on land surfaces above the water table.

SWRCB. California State Water Resources Control Board.

T

Timbisha. The word *timbisha* refers to a red material found in the Black Mountains not far from Furnace Creek, California. Timbisha also refers to the Native American tribe of the Timbisha Shoshone. *See also* **Tribe**.

Threatened species. Plant and animal species, presently threatened with extinction and likely to become endangered in the foreseeable future in the absence of special protection and management efforts.

Timbisha Shoshone Natural and Cultural Preservation Area. This area is located primarily within the central-western part of Death Valley National Park, but also includes some land administered by the Bureau of Land Management as well as two privately-owned parcels. Members of the Timbisha Shoshone Tribe would have access to this area to visit and camp as well as to engage in traditional practices pursuant to a cooperative agreement between the Tribe, the National Park Service, and the Bureau of Land Management that would be consistent with existing laws and regulations established for the management and stewardship of the park. This is not a land designation. The Timbisha Shoshone Natural and Cultural Preservation Area is intended to recognize the historical and cultural significance of the Tribe's contributions to the area on future Death Valley National Park maps.

Tribal. Pertaining to the Timbisha Shoshone Tribe.

Tribal Council. Federally recognized in 1983, the Tribal Council is made up of the Chair, Vice-Chair, Secretary-Treasurer, and two additional Council members, elected by the General Council. The governing body of the Timbisha Shoshone Tribe is the General Council, which consists of all tribal members 16 years of age or older. Any member of the Tribe who is 18 years of age is eligible to serve as a member of the Tribal Council.

Tribal land base. A secure land tenure that allows social and economic advancement.

Tribe. The Timbisha Shoshone Tribe, a tribe of Native Americans recognized by the United States pursuant to par 83 of title 25 Code of Federal Regulations (or any corresponding similar regulation or ruling).

Trust. Land held by a federal agency for use by a designated individual or group.

Trust lands. Those lands taken into trust pursuant to the Timbisha Shoshone Homeland Act, S.2102.

U

Unauthorized use. Any use other than casual use, occupancy, or development of public lands without proper authorization.

USCA. United States Code Annotated

USCOE. United States Army Corp of Engineers.

USFS. United States Forest Service.

USFWS. United States Fish and Wildlife Service.

USGS. United States Geological Survey.

USFS. United States Department of Agriculture, Forest Service.

V

Vegetation type. A classification of the plant community found on a specific site based on the plant structure of the community.

Vested water right. (1) A right supported by law that settles the use of water by an individual without contingency; (2) a right complete and consummated, and of such character that it cannot be diverted without the consent of the person to whom the right belongs; and (3) fixed or established and no longer open to controversy.

Visual Resource Management (VRM). A rating system outlined in BLM Manual 8410, designed for inventorying and managing visual resources.

VRM. *See* **Visual Resource Management.**

W

Wash. (1) To carry, erode, or destroy by moving water. (2) An ephemeral desert channel that carries runoff from infrequent, intense storm events.

Water rights appropriation doctrine. The Prior Appropriation Doctrine is the established rule for Nevada water rights and the quasi Appropriation-Riparian Doctrine is the established rule for California water rights. Although in both riparian and appropriation systems the legal property interest is the right to the use of the water, *not* the water itself, there are significant differences in the doctrines. Ownership of riparian land is *not* the basis for the appropriation water right; the water right exists when water is appropriated (diverted and used) for a beneficial purpose. Appropriated waters need not be used on riparian lands and there is no watershed limitation. Appropriated waters may be used any place, regardless of the distance from the stream. There is no reasonable use limitation; the extent of the water right is the amount that historically was put to a beneficial purpose. In an appropriation system the water right has a priority date, which is the date of the original appropriation. The senior appropriation right is entitled to full delivery of water, which must be accomplished before the next junior appropriator is entitled to take water. Appropriative rights are acquired by use and may be lost by non-use.

Wild horses and burros. Unbranded and unclaimed horses and burros and their progeny that have occupied public lands on or after December 15, 1971, or that use these lands as all or part of their habitat.

Wilderness Study Area (WSA). A roadless area of public lands that BLM has inventoried and found to be *wilderness in character*, as described in Section 603 of the FLPMA and Section 2(c) of the Wilderness Act. WSAs were established in order to study the suitability of the areas for possible designation as Wilderness by Congress. BLM protects each WSA's wilderness qualities until Congress decides whether or not the WSA will be designated as wilderness.

Withdrawal. Withholding an area of Federal land from settlement, sale, location, or entry under some or all of the general land laws for the purpose of limiting activities under those laws to maintain other public values.

WMP. West Mojave Plan.

WSA: *See* **Wilderness Study Area.**

X

Y

Z

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9.0 INDEX

A
Adobe Restoration Area, 15
Agency responsibilities, 7–8
Agriculture, 32, 35–36
Air quality, 91
Alternatives considered, 23–25
AmFac, Inc., 40, 59, 62
  Water resource agreement, 93
Ancestral homeland, 97
  Establishing, 4
  Described, 5
  And Proposed Action, 14
  Purpose for creation of, 3
Applicable laws, 9, 96, 101–102, 104
Appropriative water rights. *See* Water rights, appropriative
Archeological Resources Protection Act (ARPA) of 1979, 28
Area of Critical Environmental Concern, Warm Sulphur Springs, 20, 67
ARPA. *See* Archeological Resources Protection Act (ARPA) of 1979
Ash Meadows National Wildlife Refuge
  Cultural resources, 36
  Land use, recreation, and wildlife, 67
  Preferred Alternative impact on (*See* Tribal Cooperative Activity Areas)
  Protecting cultural resources in, 21
  Site description, 21
  Vegetation, 76
  Water resources, 53–54
  Wildlife, 85–87
Assistant Secretary for Fish and Wildlife and Parks, Negotiating team member, 4

B
Barstow, California, Field Office. *See* Bureau of Land Management (BLM), Barstow, California, Field Office
Bechtel Nevada Corporation, 58
Beneficial use. *See* Water rights, beneficial use
BIA. *See* Bureau of Indian Affairs (BIA)
Billie mine, 64
BLM. *See* Bureau of Land Management (BLM)
BOR. *See* Bureau of Reclamation (BOR)
Borax mine, 64
Buffer Area. *See* Furnace Creek Buffer Area
Bureau of Indian Affairs (BIA)
  As cooperating agency, 3
  Negotiating team member, 4
  Role in Proposed Action, 8
  Tribal recognition, 28
Bureau of Land Management (BLM)
  Barstow, California, Field Office, 20
  As cooperating agency, 3
  Cultural resources, 33–36
  Land Transfers in Trust descriptions, 18–19
  Land use, recreation, and wilderness features, 66–67
  Negotiating team member, 4
  Private Land Acquisition description, 19
  Revenues to counties, 97
  Ridgecrest, California, Field Office, 18, 20
Bureau of Land Management (BLM) (*continued*)
  Role in Proposed Action, 7
  Tonopah, Nevada, Field Station, 19, 20, 77
  Tribal Cooperative Activity/Special Use Area descriptions, 20
  Vegetation, 73–75
  Water resources, 46–53
  Wildlife, 82–85
  See also land transfer and cooperative activity/special use area names
Bureau of Reclamation (BOR)
  As cooperating agency, 3
  Negotiating team member, 4

C
California Department of Fish and Game (CDFG), 80
California Desert Protection Act (CDPA) of 1994, 2, 40
  And grazing allotments, 63
  Section 705, 3, 13
California Endangered Species Act (CESA), 107
  Special-status plant classifications under, 76
California Highway Patrol, 60
California Native Plant Protection Act (CNPPA) of 1997
  Special-status plant classifications under, 76
California Native Plant Society (CNPS), 76
California Natural Diversity Database, 11, 68, 78, 79
California State Water Resources Control Board (SWRCB), 39, 40
California water rights. *See* Water rights, California
Cappaert v. United States, 40, 86
CCC. *See* Civilian Conservation Corps (CCC)
CDFG. *See* California Department of Fish and Game (CDFG)
CDPA. *See* California Desert Protection Act (CDPA) of 1994
Centennial
  Cultural resources, 33–34
  Land use, recreation, and wilderness, 66
  Preferred Alternative impact on
    Cultural resources, 92
    Land use, recreation, and wilderness, 101
    Socioeconomic, 98–99
    Vegetation, 103–104
    Wildlife, 107
  Site description, 18–19
  Vegetation, 73–74
  Water resources, 48–49, 94–95, 96
  Wildlife, 82–83
Centennial Flat Groundwater Flow System, 37
Centennial Wild Horse Herd Management Area, 19, 107
CEQ. *See* Council on Environmental Quality (CEQ)
CESA. *See* California Endangered Species Act (CESA)
Chicago Valley Wild Horse Herd Management Area, 66, 106
China Lake Naval Air Weapons Station, 18, 62, 101
Civilian Conservation Corps (CCC), 29
Clean Water Act (CWA) of 1972, 96
CNPPA. *See* California Native Plant Protection Act (CNPPA) of 1997
CNPS. *See* California Native Plant Society (CNPS)
Community Development parcel. *See* Furnace Creek, Community Development parcel

Cooperating agencies
Comments on LEIS, 7
Defined, 3
Role in Proposed Action, 7–8
Cooperative activities, 4
Defined, 16
Development possibilities and applicable laws, 9, 96, 101–102, 104
Development possibilities/commercial, 15, 18, 19
And land use, recreation, and wilderness, 101
And socioeconomics, 98, 99
And vegetation, 104
And water resources, 93, 94, 95, 96
And wildlife, 106, 107
Development possibilities/residential, 15, 18, 19
And land use, recreation, and wilderness, 101
And socioeconomics, 98, 99
And water resources, 93, 94, 95, 96
And wildlife, 106, 107
Economic opportunities, 97
Intent of, 5
Park visitor education, 15, 20, 101
Preserving cultural traditions, 16, 17, 19, 20, 21
And land use, recreation, and wilderness, 102
And socioeconomics, 97, 99
And vegetation, 104
Resource management, 15, 16, 17, 20
And vegetation, 103, 104
And water resources, 96
And taking of wildlife, 78
Cooperative activity areas. *See* Tribal Cooperative Activity Areas
Cooperative agencies, And adoption of LEIS, 7–8
Cooperative agreements
Defined, 16
Intent of, 5
Regulation of, 27
Council on Environmental Quality (CEQ)
And legislation proposals, 3
Regulations and NEPA, 1, 7
Cultural resource protection
In Ash Meadows National Wildlife Refuge, 21
Cultural resources
Overview and definition, 28
Preferred Alternative impact on, 92
Cultural traditions, preserving. *See* Cooperative activities, preserving cultural traditions
Cumulative environmental effects defined, 89
CWA. *See* Clean Water Act (CWA) of 1972

D

Darwin, California
And groundwater drawdown, 94
Daylight Pass
Cultural resources, 32
Land use, recreation, and wilderness, 65
Preferred Alternative impact on (*See* Tribal Cooperative Activity Areas)
Site description, 17–18
Vegetation, 73
Water resources, 46
Wildlife, 81
Death Valley Groundwater Flow System, 37–38
Death Valley Junction
Cultural resources, 33
Land use, recreation, and wilderness, 66
Preferred Alternative impact on
Cultural resources, 92
Land use, recreation, and wilderness, 101
Socioeconomic, 98
Vegetation, 103
Water resources, 93–94
Wildlife, 106–107
Site description, 18
Vegetation, 73
Water resources, 46–48
Water rights, 41
Wildlife, 82
Death Valley National Park
Purposes and values for, 4
Recreational features, 63
Tribal contribution to visitor experience, 15, 101
Visitor services, 64
Water rights within, 39
Wilderness area, 62
Demography. *See* Population and demography
Desert riparian plant communities, 69
Development. *See* Cooperative activities, development possibilities
Direct environmental effects defined, 89
DOI. *See* U.S. Department of the Interior (DOI)
Drainage features. *See* Water resources, Drainage features of
Duckwater Indian Reservation, 55

E

Eagle Mountain
Cultural resources, 35
Land use, recreation, and wilderness, 67
Preferred Alternative impact on (*See* Tribal Cooperative Activity Areas)
Site description, 20
Vegetation, 75
Water resources, 53
Wildlife, 85
Economic opportunity. *See* Cooperative activities, development possibilities/commercial
Economy and employment, 58–59, 97, 98
EIS. *See* Environmental Impact Statement (EIS)
Employment. *See* Economy and employment
Endangered species. *See* Special-status species
Endangered Species Act (ESA)
Special-status plant classifications under, 76
Environmental consequences
Defined, 89
See also land transfer and cooperative activity/special use area names, Preferred Alternative impact on
Environmental justice, 60–61, 97
Environmental regulations, 9, 96, 101–102, 104
ESA. *See* Endangered Species Act (ESA)
Esmeralda County, Nevada
Bureau of Land Management revenues, 97
Economy and employment, 59
Environmental justice, 60
Housing, 59

Esmeralda County, Nevada (*continued*)
Population and demography, 56–57
Schools, 59
Socioeconomics of, 56
Executive Order
12298, 56
12989, 97

F
Federal reserved water rights. *See* Water rights, federal reserved
Fire protection. *See* Utilities and services
Flooding, 93, 95
Fort Irwin Military Reservation, 62
Fred Harvey, Inc., 40
See also AmFac, Inc.
Furnace Creek
Community Development parcel, 70, 93, 103, 106
Cultural resources, 28–29, 31
Land use, recreation, and wilderness, 64
Preferred Alternative impact on
Cultural resources, 92
Land use, recreation, and wilderness, 101
Socioeconomic, 98
Vegetation, 103
Water resources, 93
Wildlife, 106
Site description, 15
Vegetation, 70–71
Water resources, 42–44
Water rights, 41
Wildlife, 80–81
Furnace Creek Buffer Area
Land use, recreation, and wilderness, 65
Preferred Alternative impact on (*See* Tribal Cooperative Activity Areas)
Site description, 16
Vegetation, 71
Water resources, 45
Wildlife, 81
Furnace Creek Tribal Cooperative Activity Areas, Cooperative activity description, 16
Furnace Creek Tribal Mesquite Use Area
Cultural resources, 31
Land use, recreation, and wilderness, 65
Preferred Alternative impact on (*See* Tribal Cooperative Activity Areas)
Site description, 16
Vegetation, 71
Water resources, 45
Wildlife, 81
Furnace Creek Wash Historic District, 28

G
Geology, 90
Geomorphic provinces, 68
Grazing, 66, 101
Centennial, 19
And conflicts over forage, 63
History of, 62–63
Lida Community parcel, 19, 84
Lida Tribal Use Area, 20
Great Basin
Animal habitat in, 78
Geomorphic features, 68
Plant communities in, 69–70
Groundwater
And Centennial parcel, 96
Drawdown
And Darwin, 94
And desert riparian plant communities, 103
Effects of, 108
And sensitive species, 86
And wildlife, 106
Flow systems, 37–39
Monitoring of levels, 95
Rights, 40

H
Habitat. *See* Vegetation; Wildlife.
Health care, 60
Hot springs, 31
Housing, 59
Hunter Mountain
Cultural resources, 31
Land use, recreation, and wilderness, 65
Preferred Alternative impact on (*See* Tribal Cooperative Activity Areas)
Relationship to Centennial, 18
Site description, 17
Vegetation, 71–72
Water resources, 45
Wildlife, 81

I
Indian Rancheria
Cultural resources, 30
Land use, recreation, and wilderness, 64
Preferred Alternative impact on
Cultural resources, 92
Land use, recreation, and wilderness, 101
Socioeconomic, 98
Vegetation, 103
Water resources, 93
Wildlife, 106
Site description, 15
Vegetation, 71
Water resources, 44
Wildlife, 81
Indirect environmental effects defined, 89
Inyo County, California, 40
Bureau of Land Management revenues, 97
Centennial, 18
Economy and employment, 59
Environmental justice, 60
Housing, 59
Population/Demography, 56
Schools, 59
Socioeconomics of, 55

L
Land base. *See* Timbisha Shoshone Tribe, land base of
Land Transfers in Trust
Authorization request for, 4

Land Transfers in Trust (*continued*)
Description of, 14
Purpose of, 5
See under parcel names
Land use. *See* Land use, recreation, and wilderness
Land use, recreation, and wilderness
And development possibilities, 101–102
Preferred Alternative impact on, 101–102
Regional overview, 62–63
Laws concerning development. *See* Applicable laws
Lead agency, Defined, 3
Legislation proposal, Regulations regarding, 3
Legislative Environmental Impact Statement (LEIS)
Compliance with NEPA, 6
Defined, 1
Method of preparation, 11
Rules of adoption, 7
Rules of preparation and review, 1
LEIS. *See* Legislative Environmental Impact Statement
Lida Community parcel
Cultural resources, 34
Land use, recreation, and wilderness, 66
Preferred Alternative impact on
Cultural resources, 92
Land use, recreation, and wilderness, 101–102
Socioeconomic, 99
Vegetation, 104
Water resources, 95
Wildlife, 107
Site description, 19
Vegetation, 74–75
Water resources, 51–52
Wildlife, 83–84
Lida Ranch
Cultural resources, 34–35
Land use, recreation, and wilderness, 66
Preferred Alternative impact on
Cultural resources, 92
Land use, recreation, and wilderness, 101–102
Socioeconomic, 99
Vegetation, 104
Water resources, 95
Wildlife, 107
Site description, 19
Vegetation, 75
Water resources, 52–53
Wildlife, 84–85
Lida Tribal Use Area
Cultural resources, 36
Land use, recreation, and wilderness, 67
Preferred Alternative impact on (*See* Tribal Cooperative Activity Areas)
Site description, 20
Vegetation, 75
Water resources, 53
Wildlife, 85
Los Angeles, California, watershed withdrawal, 19

M

Mesquite Springs
Cultural resources, 32
Land use, recreation, and wilderness, 65
Preferred Alternative impact on (*See* Tribal Cooperative Activity Areas)
Site description, 17–18
Vegetation, 72–73
Water resources, 46
Wildlife, 81
Mining, 19, 20
And bat habitat, 83–84
Billic mine, 64
Borax mine, 64
Current claims, 62, 84
Historical activity, 29, 31
And land use, recreation, and wilderness, 66, 67, 101
Ryan mine, 64
And socioeconomics, 58
And vegetation, 104
And water resources, 96
And wilderness, 108
Mitigation measures, 89
Mohave ground squirrel, 11, 83, 107
Mojave Desert
Animal habitat in, 78
Geomorphic features, 68
Plant communities in, 69–70, 104, 106
Mojave desert tortoise, 82, 83, 107
Mojave Grazing District, 62
Multiple-use areas
Centennial, 66
Lida Community parcel, 66
Lida Tribal Use Area, 67
Scotty's Junction, 66

N

National Environmental Policy Act (NEPA) of 1969
Legislation, process of, 1
And legislation proposals, 3
Regulations and LEIS, 7
Special-status plant classifications, 76–77
National Park Service (NPS)
Cultural resources, 28–32
Land Transfer in Trust description, 15
Land use, recreation, and wilderness features, 64–65
Law enforcement/fire protection responsibilities, 60
As lead agency, 3
Negotiating team member, 4
Private Land Acquisition description, 15
Role in Proposed Action, 7
Tribal Cooperative Activity/Special Use Area descriptions, 16–18
Vegetation, 70–73
Water resources, 42–46
Water rights mandate, 40
Wildlife, 80–81
See also land transfer and cooperative activity/special use area names
National Register of Historic Places, 29
National Wildlife Refuge Areas, 67
Negotiating team members, 4, 13
Nellis Air Force Range, 55, 62

NEPA. *See* National Environmental Policy Act (NEPA) of 1969
Nevada Division of Forestry, 76, 77
Nevada Highway Patrol, 60
Nevada Natural Heritage Program, 11, 68, 78, 79
Nevada Test Site, 55, 104, 108
Nevada water rights. *See* Water rights, Nevada
No-Action Alternative
  And cultural resources, 92
  Defined, 22
  And land use, recreation, and wilderness, 102
  And socioeconomics, 100
  And vegetation, 105
  And water resources, 96
  And wildlife, 108
Noise, 91
Nonfederal lands. *See* Private lands
Notice of Intent, 6
NPS. *See* National Park Service (NPS)
Nye County, Nevada
  Bureau of Land Management revenues, 97
  As cooperating agency, 3
  Economy and employment, 58–59
  Environmental justice, 60
  Housing, 59
  Population and demography, 56–57
  Role in Proposed Action, 8
  Schools, 59
  Socioeconomics of, 55

O
OAIT. *See* Office of American Indian Trust
Office of American Indian Trust (OAIT)
  Negotiating team member, 4
Organic Act of 1916, 40
Other Special Use Areas
  Cultural resources, 32
  General description, 17
  Land use, recreation, and wilderness, 65
  Preferred Alternative impact on (*See* Tribal Cooperative Activity Areas)
  Vegetation, 72–73
  Water resources, 46
  Wildlife, 81
  See under cooperative activity/special use area name

P
Palmetto Herd Management Area, 83, 107
Parcel selection criteria, 14
Plant communities
  Defined, 68–70
  Desert riparian, 69
Police services, 60
Population and demography, 56–58
Preferred Alternative
  Overview, 89–91
  Potential environmental consequences of (*See land transfer and special use area names, Preferred Alternative impact on)*
  Site descriptions, 15–21
  Socioeconomic impacts of, 97
  See also Proposed Action
Prior Appropriation Doctrine. *See* Water rights, Prior Appropriation Doctrine
Private Land Acquisitions. *See under parcel name*
Private lands, 62
Proposed Action
  And Death Valley National Park goals, 5
  Goals of, 4, 13
  Regulatory authority for, 3
  Summary of, 14
  See also Preferred Alternative
Public involvement, Summary of, 6
Public notices, 6
Public review of LEIS, 6

R
Ranching, 20, 66, 67, 95, 99
  History of, 31, 35–36, 62
Rare species. *See* Special-status species
Record of Decision, 8
Recreation activities
  On Lida Community parcel, 84
  See also Land use, recreation, and wilderness
Recreation areas, 63
Region of influence, 55
Regulations, 9, 96, 101–102, 104
Resource management. *See* Cooperative activities, resource management
Resource protection. *See* Cooperative activities, resource management
Ridgecrest, California, Field Office. *See* Bureau of Land Management (BLM), Ridgecrest, California, Field Office
Riparian Doctrine. *See* Water rights, Riparian Doctrine
Ryan mine, 64

S
Saline Valley Groundwater Flow System, 38
Saline Valley Warm Springs
  Cultural resources, 31–32
  Hot springs, 31
  Land use, recreation, and wilderness, 65
  Preferred Alternative impact on (*See* Tribal Cooperative Activity Areas)
  Site description, 17
  Vegetation, 72
  Water resources, 45
  Wildlife, 81
Schools, 59
Scoping process, 1
Scotty's Junction
  Cultural resources, 34
  Land use, recreation, and wilderness, 66
  Preferred Alternative impact on
    Cultural resources, 92
    Land use, recreation, and wilderness, 101
    Socioeconomic, 99
    Vegetation, 104
    Water resources, 95
    Wildlife, 107
  Site description, 19
  Vegetation, 74
  Water resources, 49–51

Scotty's Junction (*continued*)
Water rights, 41
Wildlife, 83
Secretarial Report
And cooperative activities, 2
Preparation of, 4
Secretary of the Interior. *See* U.S. Department of the Interior (DOI)
Sensitive species. *See* Special-status species
Socioeconomics
And development possibilities, 98, 99
Economy and employment, 58–59
Environmental justice, 60–61
Housing, 59
Population and demography, 56–58
Preferred Alternative impact on, 97, 100
Regional overview, 55–56
Region of influence defined, 55
Schools, 59
Utilities and services, 60, 97, 98, 99
Special-status species
Animal, 79, 106–107
Ash Meadows Recovery Plan, 85–87
Bureau of Land Management list, 80, 84
Plant, 76–77, 103, 104
Special Use Areas. *See* Tribal Cooperative Activity Areas
State land, 19, 62
SWRCB. *See* California State Water Resources Control Board

T
Taylor Grazing Act of 1934, 62
Threatened species. *See* Special-status species
Timbisha Shoshone Natural and Cultural Preservation Area
Cultural resources, 31–32
Designation of, 14
General description, 16–17
Land use, recreation, and wilderness, 65
Preferred Alternative impact on (*See* Tribal Cooperative Activity Areas)
Vegetation, 71–72
Water resources in, 45
Wildlife, 81
See under cooperative activity/special use area names
Timbisha Shoshone Tribe
Federal recognition of, 3, 28
Health care services, 60
Land base of, 3, 4, 98
As minority population, 60
Negotiating team member, 4
Schools, tribally controlled, 59
Traditional practices of (*See* Traditional tribal activities)
Unemployment rate, 59
Tonopah, Nevada, Field Station. *See* Bureau of Land Management (BLM), Tonopah, Nevada, Field Station
Tonopah Test Range, 58
Topics considered but dismissed, 10, 90–91
Traditional tribal activities, 16
Centennial, 18
Lida Community parcel, 19
Lida Tribal Use Area, 20
Saline Valley Warm Springs, 17
Transportation, 90
Tribal Cooperative Activity Areas
Defined, 16
Preferred Alternative impact on
Cultural resources, 92
Land use, recreation, and wilderness, 102
Vegetation, 104
Water resources, 96
Tribal Cooperative Activity Areas (*continued*)
Wildlife, 108
See under cooperative activity/special use area names
Tribal historic district, 15
Tribal homeland. *See* Ancestral homeland
Tribal Mesquite Use Area. *See* Furnace Creek Tribal Mesquite Use Area
Tribal status, History of, 28

U
Unemployment rate among tribal members, 59
U.S. Army Corps of Engineers (USCOE), 96
Section 404 permit, 94
U.S. Department of the Interior (DOI)
And lands held in trust by Secretary, 3
Water rights, 40
U.S. Fish and Wildlife Service (USFWS)
Cultural resources, 36
Land use, recreation, and wilderness features, 67
Role in Proposed Action, 7–8
Tribal Cooperative Activity/Special Use Area description, 21
Vegetation, 76
Water resources, 53–54
Wildlife, 85–87
See also Ash Meadows National Wildlife Refuge
U.S. Supreme Court
Devil's Hole pupfish and water resources ruling, 40, 86
USFWS. *See* U.S. Fish and Wildlife Service (USFWS)
Utilities and services, 60, 98, 99

V
Vegetation
And development possibilities, 103
Method of evaluation, 70
Preferred Alternative impact on, 103–105
Regional overview, 68–70
Visual resources, 91

W
Warm Sulphur Springs
Cultural resources, 35–36
Land use, recreation, and wilderness, 67
Preferred Alternative impact on (*See* Tribal Cooperative Activity Areas)
Site description, 20
Vegetation, 75
Water resources, 53
Wildlife, 85
Water and archaeological resources, 34–35
Water resources
AmFac, Inc. agreement, 93
Competition for, 39
Conservation of, 93
And development possibilities, 93, 94, 95, 96

Water resources (*continued*)
Drainage features of, 93
Flooding, 93, 95
Groundwater drawdown and Darwin, 94
Monitoring groundwater levels, 95
Overview and definition, 37–39
Preferred Alternative impact on, 93–96
For wildlife, 78
See also Groundwater
Water rights
Appropriative, 39, 40
Beneficial use doctrine, 40
California, 40–41
Conflicts over, 63
Defined, 39–41
Federal reserved, 39–40
At Furnace Creek, 93
Lida Ranch, purchase of, 19
At Lida Ranch, 95
Nevada, 41
Prior Appropriation Doctrine, 40, 41
Riparian Doctrine, 40
At Scotty's Junction, 95
U.S. Department of the Interior, 40
Western Borax Company, 30, 64
Wetlands, 91
Wild and Free-Roaming Horse and Burro Act of 1971, 63
Wilderness. *See* Land use, recreation, and wilderness; Wilderness Areas
Wilderness Areas, 102
Daylight Pass, 65
Death Valley Junction, 19, 66
Death Valley National Park, 62
Eagle Mountain, 67
Furnace Creek, 64
Furnace Creek Buffer Area, 65
Furnace Creek Tribal Mesquite Use Area, 65
Hunter Mountain, 65
Mesquite Springs, 65
Timbisha Shoshone Natural and Cultural Preservation Area, 16
Warm Sulphur Springs, 67
Wildrose, 65
Wildlife
And development possibilities, 106, 107
Historic migration routes for, 78
Method of evaluation, 79–80
Preferred Alternative impact on, 106–108
Regional overview, 78–80
Wildrose
Cultural resources, 31
Land use, recreation, and wilderness, 65
Preferred Alternative impact on (*See* Tribal Cooperative Activity Areas)
Site description, 17
Vegetation, 72
Water resources, 45
Wildlife, 81

Y
Yomba Indian Reservation, 55

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Table 1.
Demographic and Socioeconomic Characteristics
Timbisha Shoshone Homeland
Final LEIS

		Esmeralda County, Nevada	Nye County, Nevada	Inyo County, California
DENSITY	Land Area (square miles)	3,570	18,064	10,192
	Persons/Sq. Mi.	0.4	1.5	1.8
POPULATION	1960	634	4,642	11,684
	1970	623	5,459	15,571
	1980	777	9,048	17,895
	1990	1,350	~~18,190~~ 18,639	18,281
	1997	1,165	~~27,168~~32,164	18,319
	% Change (1990 to 1997)	-13.3	~~52.8~~73	0.1
	% Change (1980 to 1990)	73	95.5	2.2
	2000 (estimated)	1,390	30,410	~~19,500~~18,050
RACE	White (1996)	1,088 (92.2%)	24,417 (93.7%)	16,260 (82.2%)
	Black (1996)	9 (0.8%)	520 (2.0%)	86 (0.5%)
	American Indian (1996)	73 (6.2%)	820 (3.1%)	1,860 (10.1%)
	Asian/Pacific Islander (1996)	10 (0.8%)	305 (1.2%)	227 (1.2%)
	Hispanic (any race) (1996)	134 (11.4%)	2,473 (9.5%)	1,936 (10.5%)
AGE	Under 5 years (1996)	89	1,461	1,173
	5-19 years (1996)	292	5,279	2,750
	20-64 years (1996)	921	14,700	
	65 years and over (1996)	189	3,808	3,600
EDUCATION	High school graduates	71.5	75.1	81.7%
	College graduates (1990)	11.1	9.5	13.5%
INCOME AND POVERTY	Median household income (1993)	26,650	33,065	27,879
	Median household income (1989)	24,386	30,211	24,386
	Per capita income (1995 for NV counties, 1996 for Inyo)	$18,462	18,428	21,382
	People of all ages in poverty (%) (1995 Estimate)	12.4	11.0	12.8
	People of all ages in poverty (%) (1989)	15.5	10.3	11.9
LABOR AND EMPLOYMENT	Civilian labor force (1996)	518	12,812	7,359
	Civilian labor force (1990)	622	9.077	6,967
	Civilian labor force unemployment rate (%) (1996)	7.9	5.1	8.4
	Civilian labor force unemployment rate (%) (1990)	6.1	3.6	7.2

Sources: Lopez, J., et al., 1998; Nevada Division of Water Planning, 1999; and U.S. Census, 1990.

Table 2.
Employment and Payrolls by Major Industry Group
Timbisha Shoshone Homeland
Final LEIS

	Employment (persons)	Percent of Total Employment	Payrolls (Millions of Dollars)	Percent of Total Payrolls	Average Annual Salaries (Dollars)	Salary as a Percent of the County Average
Esmeralda County, Nevada (1997 Data)						
Mining	150	45.9%	$6.28	64.6%	$41,856	140.8%
Construction	12	3.7%	0.14	1.5%	11,987	40.3%
Total Manufacturing	0	0.0%	0.00	0.0%	n.a.	n.a.
Transportation, Public	4	1.2%	0.07	0.7%	17,521	58.9%
Total Trade	23	7.0%	0.16	1.6%	6,749	22.7%
Finance, Insurance, Real Estate	0	0.0%	0.00	0.0%	n.a.	n.a.
Service Industries	32	9.8%	0.90	9.3%	28,192	94.8%
Total Government	106	32.4%	2.17	22.3%	20,471	68.9%
TOTAL	327	n.a.	$9.72	n.a.	$29,724	100.0%
Nye County, Nevada (1997 Data)						
Mining	1,363	15.8%	$63.55	22.6%	46,626	143.6%
Construction	548	6.3%	14.58	5.2%	26,599	81.9%
Total Manufacturing	174	2.0%	2.63	0.9%	15,107	46.5%
Transportation, Public	240	2.8%	9.14	3.3%	38,079	117.3%
Total Trade	1,117	12.9%	19.72	7.0%	17,655	54.4%
Finance, Insurance, Real Estate	176	2.0%	4.54	1.6%	25,780	79.4%
Service Industries	3,538	40.9%	119.76	42.7%	33,851	104.3%
Total Government	1,493	17.3%	46.82	16.7%	31,359	96.6%
TOTAL	8,648	n.a.	$280.74	n.a.	$32,462	100.0%
Inyo County, California (1996 Data)						
Agriculure, Forestry, Fishing	74	1.0%	$1.21	0.7%	$16,345	72.0%
Mining and Construction	336	4.7%	12.49	7.7%	37,165	163.7%
Manufacuring- Durable	48	0.7%	1.02	0.6%	21,175	93.3%
Manufacturing-Nondurable	280	3.9%	7.18	4.4%	25,651	113.0%
Transportation, Communication & Utilities	284	3.9%	9.53	5.9%	33,556	147.8%
Wholesale Trade	177	2.5%	4.28	2.6%	24,175	106.5%
Retail Trade	979	13.7%	17.55	10.9%	17,930	79.0%
Finance, Insurance, Real Estate	142	2.0%	3.29	2.0%	23,199	102.2%
Travel, Dining, and Rec. Service	1,555	21.8%	16.20	10.0%	10,416	45.8%
Other Services	1,056	14.8%	22.09	13.7%	20,921	92.2%
Total Government	2,194	30.8%	66.89	41.4%	33,153	146.0%
TOTAL	7,125	n.a.	161.73	n.a.	22,700	100.0%

n.a.—not applicable

Sources: Nevada Division of Water Planning, 1999; and Dean Runyan and Associates, 1998.

Table 3.
Housing and Occupancy
Timbisha Shoshone Homeland
Final LEIS

		Esmeralda County, Nevada	Nye County, Nevada	Inyo County, California
HOUSING UNITS (1990)	Total Housing Units	966	8,073	8,712
	Occupied Housing (Demand)	588	6,664	7,565
	Owner Occupied	355 (60.4%)	4,677 (70.2%)	5,017 (66.3%)
	Renter Occupied	233	1,987	2,548
	Vacant Housing Units	378	1,409	1,147
	Vacancy Rate	35.2%	14.6	7.9%
VALUE	Median Value	$41,400	$70,800	$115,800

Source: U.S. Census, 1990.

Table 4.
Public Schools in the Region of Influence
Timbisha Shoshone Homeland
Final LEIS

COUNTY	SCHOOL DISTRICTS	SCHOOLS	APPROXIMATE ENROLLMENT (1998/1999)
Inyo County	Big Pine Unified	Big Pine Elementary School Big Pine High School Eureka Dunes High School	268
	Bishop Union Elementary	Elm Street Elementary School Home Street Middle School Pine Street Elementary School	1510
	Bishop Joint Union High	Bishop High School Palisade Glacier High School	816
	Death Valley Unified	Death Valley Elementary School Death Valley Academy High School Tecopa Frances Elementary School Shoshone High School	64
	Lone Pine Unified	Lo-Inyo Elementary School Lone Pine High School Olancha Elementary School	457
	Owens Valley Unified	Bright High School Owens Valley High School Owens Valley Elementary School	138
	Round Valley Joint Union Elementary	Round Valley Elementary School	112
Nye County	Nye County School District	Amargosa Valley Elementary School Beatty Elementary School Beatty High School Duckwater Elementary School Gabbs Elementary School Gabbs High School Manse Elementary School JG Johnson Elementary School Mt. Charleston Elementary School Rosemary Clarke Middle School Pahrump High School Pahrump Primary School Pahrump Intermediate School Pahrump $5^{th}/6^{th}$ Center Round Mountain Elementary School Round Mountain Jr./Sr. High School Silver Rim Elementary School Tonapah Elementary School Tonapah High School	5,400
Esmeralda County	Esmeralda County School District	Dyer Elementary School Goldfield Elementary School Silver Peak Elementary School	101

Sources: Nye County School District, Office of Superintendent, 2000; Esmeralda School District, 2000; U.S. Counties, 2000; and Inyo County, 2000b.

Table 5.
Providers of Utilities in the Region of Influence
Timbisha Shoshone Homeland
Final LEIS

UTILITY	DEATH VALLEY NATIONAL PARK	ESMERALDA COUNTY	NYE COUNTY	INYO COUNTY
Power/Electric	Southern California Edison	Valley Electric Ass. Inc.; Sierra Pacific Corporation	Valley Electric Associates Inc.; Sierra Pacific Corporation	Los Angeles Department of Water and Power
Phone	Pacific Bell	Nevada Bell; Citizens Communications	Nevada Bell; Citizens Communications	GTE
Water	NPS System	Goldfield Utilities Company	Beatty Water and Sanitation; Central NV Utilities; Desert Utilities, Inc.; Shoshone Water Co.; Tonopah Public Utilities;	Los Angeles Department of Water and Power and several private Community Service Districts
Cable		Eagle West Cable	Eagle West Cable	Weststar

Sources: Inyo County Planning Department, 2000a; Nye County Planning Department, 2000; and Anderson, 2000.

Table 6.
Health and Emergency Services
Timbisha Shoshone Homeland
Final LEIS

	NAME	LOCATION(S)
Police	Nye County Sheriff's Office	Tonopah, Pahrump, Beatty, Mercury, and Amargosa Valley,
	Esmeralda County Sheriff's Office	Goldfield
	Inyo County Sheriff's Department	Independence
	Bishop Police Department	Bishop
	California Highway Patrol	Bishop
	Nevada Highway Patrol	Beatty
Fire and Ambulance	Beatty Volunteer Fire and Ambulance Service	Beatty
	Tonoapah Volunteer Fire and Ambulance Service	Tonoapah
	Nye County EMS	Pahrump
	Goldfield Fire and Ambulance Service	Goldfield
	Silver Peak Fire and Ambulance Service	Silver Peak
	Fish Lake Valley Valley	Fish Lake
	Lone Pine Fire and Ambulance Service	Lone Pine
Hospitals/Health Clinics	Death Valley Clinic	Death Valley
	Northern Inyo Hospital	Bishop
	Southern Inyo Hospital	Lone Pine
	Ridgecrest Community Hospital	Ridgecrest
	Death Valley Health Center	Shoshone
	Pahrump Medical Center	Pahrump
	Nye Regional Medical Center	Tonopah
	Lone Pine Clinic	Lone Pine
	Armagosa Clinic	Armagosa

Sources: Anderson, 2000; Inyo County Planning Department, 2000a; and Moore, 2000.

Table 7.
Contribution of Various Projects to the Nye County Economy
Timbisha Shoshone LEIS
Final LEIS

	Year of Impact	Direct Employment	Secondary Employment	Total Employment	Resident Employment	Resident Population	Personal Income	Output	Gross Regional Product
DOE Yucca Mountain Project (1)	1999	1,095	182	1,277	652	1,114	47,360	70,124	41,198
Nevada Test Site and Related DOE Activity (1)	1999	1,311	171	1,482	214	1,035	37,710	81,648	47,772
Ponderosa & Pahrump Dairies (2)	1999	92	183	275	235	266	9,352	7,832	12,379
Desert Space Station Science Museum (3)	2004 (Construction)	18	4	22	16	13	652	2,414	1,187
Desert Space Station Science Museum (3)	2005 (Operations & Visitors)	88	224	312	221	113	9,784	22,190	13,116
Nellis Air Force Base (2)	1998	46	28	74	41	116	2,411	1,806	3,848
Military Retirees (4)	1998	0	51	51	47	23	7,819	3,516	2,040
Mountain Falls Resort Community and Cottonwoods and Artesia Subdivisions (5)	2006	592	1,849	2,081	11,630	12,660	798,900	142,856	93,443

(1) Based on Current Patterns of Workforce Assignment, Residency, and Procurement.
(2) Based on Current Operations and Procurement
(3) Based on Expected Construction, Procurement and Operations
(4) Based on Current Retiree Spending and Income
(5) Based on Expected Development Program and Buildout
Sources: Nye County *Economic-Demographic Reports* , Nos. 1, 3, 6, 7, 8, 9, and 10, 1999.

Table 8.
CDCA Land Classifications
Timbisha Shoshone Homeland
Final LEIS

Class	Description
Class C (Controlled)	Class C designation applies to areas which have been preliminarily recommended as suitable for wilderness designation. These areas are currently managed under Class L guidelines, or Interim Management Policy (IMP) and Guidelines for Lands Under Wilderness Review, whichever are stricter. Final management decisions for this will depend upon congressional legislation. (Class C covers approximately 16 percent of BLM lands in the CDCA.)
Class L (Limited Use)	Class L designation has been applied to nearly 50 percent of BLM managed land within the CDCA, including the proposed project sites, and the majority of the Panamint Valley (south of State Highway 190). This designation generally limits activities to "lower-intensity, carefully controlled multiple use of resources" (BLM, 1980) to protect exploration uses are permitted in Class L areas, subject to 43 CFR 3802 and 43 CFR 3809 regulations, and applicable state and local law.
Class M (Moderate Use)	Class M provides for a wide variety of uses such as mining, livestock grazing, recreation, and energy and utility development. This class covers nearly 30 percent of the CDCA.
Class I (Intensive Use)	Class I is a class designated for concentrated use of lands and resources to meet human needs. This class covers less than 5 percent of the CDCA.

Source: National Park Service, U.S. Department of Interior, 1988b.

Table 9.
Observed Common Plant Species
Timbisha Shoshone Homeland
Final LEIS

DIVISION Class Family *Genus species*	Common name	Furnace Creek	Death Valley Junction	Scotty's Junction	Centennial	Lida
CONIFEROPHYTA	**CONIFERS**					
Cupressaceae	**Cypress Family**					
Juniperus osteosperma	Utah juniper				X	X
GNETOPHYTA						
Ephedraceae	**Mormon Tea Family**					
Ephedra nevadensis	Nevada ephedra				X	X
Ephedra viridis	green ephedra				X	X
Pinaceae	**Pine Family**					
Pinus monophylla	pinyon pine					X
ANTHOPHYTA	**FLOWERING PLANTS**					
Dicotyledonae	**DICOTS**					
Amaranthaceae	**Amaranth Family**					
Tidestromia oblongifolia	honeysweet	X				
Asteraceae	**Sunflower Family**					
Ambrosia dumosa	burro-weed	X	X	X	X	
Amphipappus fremontii	chaff-bush					X
Artemisia t. tridentata	big sagebrush					X
Artemisia tridentata vaseyana	mountain sagebrush					X
Atrichoseris platyphylla	gravel ghost	X				

Table 9.
Observed Common Plant Species
Timbisha Shoshone Homeland
Final LEIS

DIVISION Class Family *Genus species*	Common name	Furnace Creek	Death Valley Junction	Scotty's Junction	Centennial	Lida
Bebbia juncea	sweet bush			X	X	X
Chaenactis d. douglasii	dusty maidens		X			
Chrysothamnus paniculatus	black-stem			X		X
Chrysothamnus teretifolius	terete-leaved rubberbrush				X	X
Chrysothamnus v. viscidiflorus	yellow rabbitbrush			X	X	X
Chysothamnus nauseosus consimilis	rubber rabbitbrush			X	X	X
Cirsium neomexicanum	thistle					X
Encelia farinosa	brittle brush				X	
Geraea canescens	desert sunflower	X				
Gutierrezia sarothrae	broom snakeweed			X	X	X
Hymenoclea salsola	burrobrush			X	X	
Pluchea sericea	arroweed	X				
Psathyrotes annua	little turtleback	X		X	X	
Psathyrotes ramosissima	turtleback	X				
Tetradymia canescens	gray horsebrush					X
Brassicaceae	**Mustard Family**					
Caulanthus crassicaulis	thick-stem wild cabbage					X
Descurainia sp.	tansy mustard		X			
Lepidium fremontii	desert alyssum			X	X	X
Stanleya elata	Panamint prince's plume				X	
Stanleya pinnata	desert prince's plume			X		X

Table 9.
Observed Common Plant Species
Timbisha Shoshone Homeland
Final LEIS

DIVISION Class Family *Genus species*	Common name	Furnace Creek	Death Valley Junction	Scotty's Junction	Centennial	Lida
Cactaceae	**Cactus Family**					
Echinocereus engelmannii	calico cactus					
Opuntia b. basilaris	beavertail cactus				X	X
Opuntia e. echinocarpa	golden cholla			X	X	X
Opuntia erinaceae	Mojave prickly pear					X
Scleranthus polyancistrus	Mojave fish-hook cactus					X
Caryophyllaceae	**Pink Family**					
Arenaria macradenia	Mojave sandwort					X
Chenopodiaceae	**Goose-foot Family**					
Atriplex canescens	fourwing saltbush	X	X	X	X	X
Atriplex confertifola	shadscale saltbrush		X	X	X	X
Atriplex hymenolytra	desert holly	X				
Atriplex polycarpa	allscale saltbush	X	X	X		
Grayia spinosa	hopsage			X	X	X
Halogeton glomeratus	halogeton			X		
Kochia americana	green molly			X	X	X
Krascheninnikovia lanata	winter fat					X
*Salsola tragus**	Russian thistle	X	X	X		X
Sarcobatus vermiculatus	greasewood			X		X
Suaeda moquinii	alkali sea-blite	X	X	X		

Table 9.
Observed Common Plant Species
Timbisha Shoshone Homeland
Final LEIS

DIVISION Class Family *Genus species*	Common name	Furnace Creek	Death Valley Junction	Scotty's Junction	Centennial	Lida
Cuscutaceae	**Dodder Family**					
Cuscuta denticulata	dodder	X	X	X	X	
Euphorbiaceae	**Spurge Family**					
Chamaesyce micromera	Sonoran sandmat	X				
Chamaesyce parishii	Parish's chamaesyce	X	X	X	X	X
Fabaceae	**Pea Family**					
Prosopis glandulosa torreyana	honey mesquite	X	X			
Lupinus sp.	Lupine					X
Geraniaceae	**Geranium Family**					
Erodium botrys	Crane's bill					X
Grossulariaceae	**Gooseberry Family**					
Ribes c. cereum	wax currant					X
Hydrophyllaceae	**Waterleaf Family**					
Phacelia sp.	phacelia				X	X
Lamiaceae	**Mint Family**					
Salazaria mexicana	bladder sage				X	
Salvia columbariae	chia				X	
Malvaceae	**Mallow Family**					
Sphaeralcea ambigua	apricot mallow				X	X

Table 9.
Observed Common Plant Species
Timbisha Shoshone Homeland
Final LEIS

DIVISION Class Family *Genus species*	Common name	Furnace Creek	Death Valley Junction	Scotty's Junction	Centennial	Lida
Oleaceae	**Olive Family**					
Mendora spinescens	spiny mendora				X	
Onagraceae	**Evening Primrose Family**					
Camassonia boothii condensata	shredding evening primrose		X	X	X	X
Oenothera brevipes	short-stemmed evening primrose	X	X			
Planataginaceae	**Plantago Family**					
Plantago ovata	plantain		X	X		
Polygonaceae	**Buckwheat Family**					
Chorizanthe rigida	spiny herb	X	X	X		X
Eriogonum deflexum	flat-topped buckwheat			X	X	X
Eriogonum cespitosum cf.	cushion eriogonum					X
Eriogonum fasciculatum polifolium	buckwheat				X	X
Eriogonum inflatum	desert trumpet		X	X	X	X
Eriogonum nidularium	bird's nest buckwheat				X	X
Eriogonum nudum	wand buckwheat					X
Eriogonum trichopes	little trumpet				X	X
Eriogonum umbellatum cf. *nevadensis*	sulfur flower					X

Table 9.
Observed Common Plant Species
Timbisha Shoshone Homeland
Final LEIS

DIVISION Class Family *Genus species*	Common name	Furnace Creek	Death Valley Junction	Scotty's Junction	Centennial	Lida
Oxytheca perfoliata	saucer plant				X	
Rosaceae	**Rose Family**					
Coleogyne ramosissima	blackbrush				X	X
Prunus andersonii	desert peach					X
Prunus emarginata	bitter cherry					X
Purshia tridentata glandulosa	antelope bush					X
Salicaceae	**Willow Family**					
Salix exigua	narrow-leaved willow					X
Scrophulariaceae	**Snapdragon Family**					
Cordylanthus eremicus cf.	purple bird's-beak					X
Penstemon floridus	Inyo beard tongue				X	X
Solanaceae	**Nightshade Family**					
Lycium cooperi	Cooper's desert thorn				X	X
Tamaricaceae	**Tamarisk Family**					
*Tamarisk ramosissima**	tamarisk	X	X			X
Zygophyllaceae	**Caltrop Family**					
Larrea tridentata	creosote bush	X	X	X		

Table 9.
Observed Common Plant Species
Timbisha Shoshone Homeland
Final LEIS

DIVISION Class Family *Genus species*	Common name	Furnace Creek	Death Valley Junction	Scotty's Junction	Centennial	Lida
Monocotyledonae	**MONOCOTS**					
Liliaceae	**Lily Family**					
Yucca brevifolia	Joshua tree			X	X	X
Palmaceae						
*Phoenix dactylifera**	date palm	X				
*Washingtonia filifera**	California fan palm	X				
Poaceae	**Grass Family**					
Achnatherum hymenoides	Indian ricegrass			X	X	X
Achnatherum sp.	desert needle grass					X
*Arundo donax**	giant reed grass	X				
*Bromus madritensis rubens**	red brome					X
*Bromus tectorum**	cheat grass			X		X
Distichlis spicata	salt grass	X				
Elymus elymoides californicus	squirreltail grass			X		X
Erioneuron pulchellum	fluff grass					
Phragnites australis	giant reed	X				
Pleuraphis jamesii	galleta grass			X		X
Unidentified grass						X

* not native to area

Table 10.
Special-Status Plant Species
Timbisha Shoshone Homeland
Final LEIS

Scientific Name	Common Name	Status FED/ST CNPS-BLM	Range and Habitat Requirements	Suitability of Habitat/Potential Occurrence At Land Transfer, Acquisition and Transfer and Lands Subject to Cooperative Activities												
				FC	MS	WR	DVJ	SJ	HM	DP	L	C	EM	WSS	AM	IR
Achnatherum aridum	Mormon needle grass	--/--/2	Joshua tree woodland, pinyon-juniper woodland, limestone slopes 4,000-5,700 feet. Known from Funeral and Clark mountains in CA. east to Colorado and AZ.	L	L	M	L	L	M	L	M	M	L	L	L	L
Arabis pulchra munciensis	Darwin rock-cress	--/--/2, S	Creosote bush scrub, saltbush scrub, Joshua tree and pinyon-juniper woodland often on carbonate substrate, rocky slopes 2,000-7,000 feet CA to UT.	L	L	M	L	L	M	M	M	M	L	L	L	M
Arctomecon merriamii	white bear poppy	FSC/--/1B, S	Creosote bush scrub, loose gravelly slopes 3,000-4,500 feet. Known form the Death Valley region east to Clark County, NV.	L	L	M	L	L	M	M	L	L	M	L	L	M
Astragalus atratus mensanus	Darwin mesa milk vetch	--/--/1B, S	Great basin sagebrush scrub, Joshua tree woodland, pinyon-juniper woodland/carbonate or granitic 5,000-6,000 feet. Known from these habitats north and west of Panamint Valley in CA.	L	L	M	L	L	M	L	L	M	L	L	L	M
Astragalus funereus	black milk vetch	FSC/--/1B, S	Mojavean desert scrub (sometimes carbonate) 4,000-5,000 feet. Known from the Funeral Mountains in Inyo County, CA.	L	L	L	L	L	L	M	L	L	L	L	L	L
Astragalus phoenix	Ash Meadows milk-vetch	FE/NL/S	Saltbush scrub on barren saline clay flats and knolls between 2,200-2,380 feet. Known only from Ash Meadows National Wildlife Refuge, Nye County, NV	L	L	L	L	L	L	L	L	L	L	L	H	L

Table 10.
Special-Status Plant Species
Timbisha Shoshone Homeland
Final LEIS

Scientific Name	Common Name	Status FED/ST CNPS-BLM	Range and Habitat Requirements	Suitability of Habitat/Potential Occurrence At Land Transfer, Acquisition and Transfer and Lands Subject to Cooperative Activities											
				FC	MS	WR	DVJ	SJ	HM	DP	L	C	EM	WSS	AM	IR
Astragalus serenoi var. *shockleyi*	naked milk-vetch	--/--/2	Mojavean desert scrub, Great Basin scrub , pinyon-juniper woodland/ alkaline, granitic alluvium, bare places 5,000-7,500 feet. Known form the Grapevine and Cottonwood Mountains in CA to western NV.	L	L	M	L	L	L	M	L	L	L	L	L	L
Blepharidachne kingii	king's eyelash grass	--/--/2	Pinyon-juniper woodland (carbonate), dry rocky places 5,000-7,000 feet. Known from the Panamint, Grapevine, Inyo and White mountains in CA to Utah.	L	L	M	L	L	L	M	M	L	L	L	L	M
Bouteloua trifida	red gramma	--/--/2	Creosote bush scrub, dry rocky calcareous slopes between 2,100 to 6,000 feet. Known from Death Valley and from the Providence Mountains in CA east to NV, NM, and TX.	L	L	L	L	L	M	M	L	L	M	M	L	L
Centaurium namophilum	spring-loving centaury	FT/NL/S	Moist generally alkaline scrub less than 4,500 feet. Known from the vicinty of Beatty, NV south along the Armagosa River to Tecopa, Inyo County, CA	L	L	L	L	L	L	L	L	L	M	L	H	L
Cordylanthus tecopensis	Tecopa bird's-beak	FSC/--/1B, S	Creosote bush scrub, meadows and seeps/mesic alkaline. Known from Tecopa Hot Springs, Saratoga Springs in Inyo County, CA east into Nye County, NV	L	L	L	L	L	L	L	L	L	L	L	M	M
Cympterus gilmanii	Gilman's cymopterus	--/--/2	Creosote bush scrub, dry rocky slopes between 3,500 to 6,500 feet. Ranges from the last Chance Mountains in CA to western NV.	L	L	M	L	L	L	M	L	L	L	L	L	L

MAPS
FIGURES

Table 10.
Special-Status Plant Species
Timbisha Shoshone Homeland
Final LEIS

Scientific Name	Common Name	Status FED/ST CNPS-BLM	Range and Habitat Requirements	Suitability of Habitat/Potential Occurrence At Land Transfer, Acquisition and Transfer and Lands Subject to Cooperative Activities												
				FC	MS	WR	DVJ	SJ	HM	DP	L	C	EM	WSS	AM	IR
Dedeckera eurekensis	July gold	FSC/CR/1B	Mojavean desert scrub (carbonate), Limestone outcrops, 3,660-6,660 feet. Known from the White and Inyo Mountains in Inyo County CA.	L	L	L	L	L	L	L	L	L	L	L	L	M
Enceliopsis covillei	Panamint daisy	FSC/--/1B, S	Mojavean desert scrub (subalkaline), Joshua Tree woodland, pinyon-juniper woodland, below 6,000 feet. Limited to the west side of the Panamint mountains in Inyo County, CA.	L	L	M	L	L	L	L	L	L	L	L	L	L
Enceliopsis nudicaule	Ash Meadows sunray	FT/--/S	Creosote and saltbush scrub in dry washes or on weathered limestone outcrops between 2,300 and 2,400 feet. Known from Ash Meadows Wildlife Refuge in Nye County, NV.	L	L	L	L	L	L	L	L	L	L	L	H	L
Eriogonum contiguum	Reveal's buckwheat	--/--/2	Mojavean Desert Scrub, sandy flats 175 to 3,000 feet. Known from CA in Inyo and San Bernardino counties into western NV.	L	L	L	L	L	L	L	L	L	M	M	L	M
Eriogonum eremicola	Wildrose canyon buckwheat	FSC/--/1B, S	Pinyon-juniper woodland, Upper montane coniferous forest/ sandy or gravelly soils from 7,500-10,000 feet. Known from CA in the Inyo and Panamint mountains	L	L	H	L	L	L	L	L	L	L	L	L	M
Eriogonum microthecum var. *panamintense*	Panamint Mountains buckwheat	FSC/--/1B, S	Pinyon-juniper woodland, dry rocky slopes 5,000-9,400 feet. Known from CA in the Inyo and Panamint mountains	L	L	H	L	L	L	L	L	L	L	L	L	M

Table 10.
Special-Status Plant Species
Timbisha Shoshone Homeland
Final LEIS

Scientific Name	Common Name	Status FED/ST CNPS-BLM	Range and Habitat Requirements	Suitability of Habitat/Potential Occurrence At Land Transfer, Acquisition and Transfer and Lands Subject to Cooperative Activities												
				FC	MS	WR	DVJ	SJ	HM	DP	L	C	EM	WSS	AM	IR
Gilia ripleyi	Ripley's gilia	--/--/2	Creosote bush scrub, limestone crevices, 3,000 to 4,500 feet. Known from the Panamint Mountains in Inyo County CA to south western NV.	L	L	L	L	L	L	M	L	L	L	L	L	L
Gilmania luteola	golden carpet	--/--/1B	Barren alkali slopes, alkali sinks below 1,200 feet. Known from the Death Valley region in CA.	H	M	L	M	L	L	L	L	L	L	M	M	M
Grindelia fraxino-pratensis	Ash Meadows gumplant	FT/--/1B, S	Wet clay of meadows and woodland borders approximately 2,100 feet. Known from Carson Slough and Ash Meadows National Wildlife Refuge.	L	L	L	L	L	L	L	L	L	L	L	H	L
Ivesia kingii eremica	Ash Meadows ivesia	FT/--/S	Desert sink saltbush scrub on light-colored clay uplands and saline seep areas between 2,190-2,300 feet. Known from Ash Meadows National Wildlife Refuge in Nye County, NV	L	L	L	L	L	L	L	L	L	L	L	H	L
Lupinus m. magnificus	Panamint Mts lupine	FSC/--/1B, S	Great Basin scrub, upper montane coniferous forest/sandy, dry gravelly banks, pinyon-juniper woodland 5,550-7,500 feet. Known from the Panamint Mountains in Inyo County, CA.	L	L	H	L	L	L	L	L	L	L	L	L	L
Mentzelia leucophylla	Ash Meadows blazingstar	FT/--/S	Desert sink saltbush scrub in canyon washes or spring areas on sandy and saline soils. Known from Ash Meadows National Wildlife Refuge in Nye County, NV	L	L	L	L	L	L	L	L	L	L	L	H	L

Table 10.
Special-Status Plant Species
Timbisha Shoshone Homeland
Final LEIS

Scientific Name	Common Name	Status FED/ST CNPS-BLM	Range and Habitat Requirements	Suitability of Habitat/Potential Occurrence At Land Transfer, Acquisition and Transfer and Lands Subject to Cooperative Activities												
				FC	MS	WR	DVJ	SJ	HM	DP	L	C	EM	WSS	AM	IR
Nitrophila mohavensis	Armagosa nitrophila	FE/CE/1B	Desert sink saltbush scrub on alkaline flats 1,800 to 2,200 feet. Restricted to the Armagosa Desert in eastern CA and western NV.	L	L	L	L	L	L	L	L	L	L	L	H	L
Petalonyx thurberi gilmanii	Death Valley sandpaper plant	FSC/--/1B, S	Desert dunes and Mohavean desert scrub, dry sandy or gravelly places below 4,000 feet in Inyo County, CA	M	M	L	L	L	L	L	L	L	L	M	L	M
Peityle inyoesis	Inyo rock daisy	FSC/--/1B, S	Pinyon-juniper woodland on dry rocky slopes 5,400 to 7,800 feet. Known from the southern Inyo Mountains in CA	L	L	L	L	L	L	L	L	L	L	L	L	M
Phacelia amabilis	Saline Valley phacelia	FSC/--/3	Creosote bush scrub at approximately 1,800 feet. Inyo and White Mountains of Inyo County, CA.	L	L	L	L	L	L	L	L	L	L	L	L	M
Phacelia mustelina	Death Valley round-leaved phacelia	--/--/1B, S	Mojavean desert scrub, pinyon-juniper woodland, rocky places often in limestone 3,000-6,000 feet. Known from Mountains in the Death Valley Region in CA and NV	L	L	M	L	L	M	M	L	L	L	L	L	M
Phacelia nashiana	Charlotte's phacelia	FSC/--/1B, S	Joshua tree woodland, creosote bush scrub, pinyon-juniper woodland / granitic, fine loose sand or gravel on steep slopes below 6,500 feet. Known from the east flank of the Sierra in Kern County to the Inyo Mountains in Inyo County, CA	L	L	L	L	L	M	L	L	L	L	L	L	M

Table 10.
Special-Status Plant Species
Timbisha Shoshone Homeland
Final LEIS

Scientific Name	Common Name	Status FED/ST CNPS-BLM	Range and Habitat Requirements	Suitability of Habitat/Potential Occurrence At Land Transfer, Acquisition and Transfer and Lands Subject to Cooperative Activities												
				FC	MS	WR	DVJ	SJ	HM	DP	L	C	EM	WSS	AM	IR
Plagiobothyrs salsus	desert popcorn flower	--/--/2	Moist alkaline mud flats, alkaline sink, playas (alkaline) 2,000 feet. Known from south east Oregon to the north east Mojave Desert into NV.	L	L	L	L	L	L	L	L	L	L	M	M	M
Scutellaria lateriflora	Blue skullcap	--/--/2	Wet meadow and seeps (mesic), Marsh and swamps approximately 1,500 feet. Rare in CA it ranges from Saline Valley to British Columbia.	L	L	L	L	L	M	L	L	L	L	L	L	M

Potential Occurrence Codes

H—High: Suitable habitat present and site is in vicinity of known distribution and elevation range for taxon.

M—Moderate: Suitable habitat present but not in known distribution and elevation range for taxon.

L—Low: Suitable habitat not present and out of known distribution and elevation range for taxon.

Column Definitions:

FE—Federally Listed as Endangered.

FT—Federally Listed as Threatened.

SSC—Identified as a Federal "Species of Special Concern" (Former Category 2 Candidate for listing).

NL—Nevada Endangered.

CR—California Rare.

1B—Identified as rare, threatened, or endangered in California and elsewhere by the California Native Plant Society.

2—Identified as rare, threatened, or endangered in California but more common elsewhere by the California Native Plant Society.

3—Identified as plants that need more information to assign to a category (Review List) by the California Native Plant Society.

Site Designations: **FC**—Furnace Creek, **MS**—Mesquite Springs, **WR**—Wild Rose, **DVJ**—Death Valley Junction, **IR**—Indian Rancheria, **HM**—Hunter Mountain, **DP**—Daylight Pass, **L**—Lida, **C**—Centennial, **EM**—Eagle Mountain, **WSS**—Warm Sulfur Springs.

Sources: Munz and Keck, 1968; Munz, 1974; Hickman, 1993; Skinner and Pavlik, 1994; Nevada Natural Heritage Program, 2000; California Department of Fish and Game, 2000; University of Nevada, Reno, 2000.

Table 11.
Wildlife Species Observed or Expected to Occur On Lands Proposed for Transfer, Acquisition and Transfer, and Cooperative Activities/Special Uses Timbisha Shoshone Homeland Final LEIS

Scientific name[1]	Common name	DVJ	IR	FC	SJ	LR	LS	C
MAMMALS								
CANIDAE - Dogs, Foxes								
Canis latrans	coyote	E	E	O	E	E	E	E
Urocyon cinereoargenteus	gray fox	NE	NE	NE	NE	E	E	E
Vulpes velox = mutica	kit fox	E	E	O	E	E	E	E
FELIDAE - Cats								
Felis concolor	mountain lion	E	E	E	E	E	O	E
Lynx rufus	bobcat	E	E	E	E	E	E	E
PROCYONIDAE -Raccoons and Kin								
Bassariscus astutus	ringtail	E	E	O	E	E	E	E
Procyon lotor	raccoon	NE	NE	NE	NE	E	E	E
MUSTELIDAE - Skunks and Kin								
Spilogale putorius	spotted skunk	E	E	E	E	E	E	E
Taxidea taxus	badger	E	E	E	E	E	E	E
SCIURIDAE - Squirrels								
Ammospermophilus leucurus	white-tailed ground squirrel	O	E	E	O	E	E	E
Eutamius panamintinus	Panamint chipmunk	NE	NE	NE	NE	E	E	E
Spermophilus beecheyi	California ground squirrel	E	E	E	E	E	E	E
Spermophilus mohavensis	Mohave ground squirrel	NE	E	E	NE	NE	NE	E
Spermophilus tereticaudus	round-tailed ground squirrel	O,E	E	E	O	O	E	O
GEOMYIDAE - Pocket Gophers								
Thomomys umbrinus oreocus	pygmy pocket gopher	NE	NE	NE	NE	E	E	E
Thomomys umbrinus scapterus	Panamint pocket gopher	NE	NE	NE	NE	E	E	E
HETEROMYIDAE - kangaroo rat								
Dipodomys merriami	Merriam's kangaroo rat	E	E	E	E	E	E	E
Dipodomys microps	chisel-toothed kangaroo rat	E	E	E	E	E	E	E
Dipodomys panamintinus	Panamint kangaroo rat	E	E	E	E	E	E	E
Perognathus formosus mohavenensis	long-tailed pocket mouse	E	E	E	E	E	E	E
Perognathus longimembris	little pocket mouse	E	E	E	E	E	O	E
Perognathus parvus	Great Basin pocket mouse	E	E	E	E	E	E	E
Perognathus penicillatus	desert pocket mouse	E	E	E	E	E	E	E
ENTHRIZONTIDAE - Porcupine								
Erithizon dorsatum	porcupine	NE	NE	NE	NE	P	P	P
MURIDAE - Mice								
Mus musculus	house mouse	E	E	E	E	E	E	E

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Scientific name[1]	Common name	DVJ	IR	FC	SJ	LR	LS	C
CRICETIDAE - Mice, Rats, Voles								
Neotoma cinerea	bushy-tailed woodrat	E	E	E	E	E	E	E
Neotoma lepida	desert woodrat	O	O	O	O	O	O	O
Onychomys torridus	southern grasshopper mouse	E	E	E	E	E	E	E
Peromyscus boylii	brush mouse	E	E	E	E	E	E	E
Peromyscus crinitus	canyon mouse	E	E	E	E	E	E	E
Peromyscus eremicus	cactus mouse	E	E	E	E	E	E	E
Peromyscus maniculatis	deer mouse	E	E	E	E	E	E	E
Peromyscus truei	pinon mouse	E	E	E	E	E	E	E
Reithrodontomys megalotis	western harvest mouse	E	E	E	E	E	E	E
SORICIDAE - Shrews								
Notiosorex crawfordi	desert shrew	E	E	E	E	E	E	E
Sorex tenellus	Inyo shrew	NE	NE	NE	NE	E	E	E
LEPORIDAE - Hares, Rabbits								
Lepus californicus	black-tailed jackrabbit	E	E	E	E	O	O	O
Brachylagus idahoensis	pygmy rabbit	E	E	E	E	E	E	E
Sylvilagus audubonii	desert cottontail	O	E	O	O	O	O	O
Sylvilagus nuttalli	Nuttall's cottontail	E	E	E	E	E	E	E
CERVIDAE - Deer								
Odocoileush hemionus	mule deer	E	E	E	E	E	E	E
BOVIDAE - Mountain Sheep								
Ovis canadensis nelsoni	Nelson's bighorn sheep	E	E	E	E	E	E	O
ANTILOCAPRIDAE - Antelopes								
Antilocapra americana	American antelope	E	E	E	E	E	E	E
EQUIDAE - Horses and Their Allies								
Equus assinus	burro	O	NE	E	O	E	E	O
Equus caballus	wild mustang	O	NE	E	E	E	E	O
VESPERTILIONIDAE - Bats								
Antrozous pallidus	pallid bat	P	P	E	P	E	E	E
Lasionycteris noctivagans	silver-haired bat	P	P	E	P	E	E	E
Lasiurus cinereus	hoary bat	P	P	E	P	E	E	E
Myotis californicus	California myotis	P	P	E	P	E	E	E
Myotis subulatus	small-footed myotis	P	P	E	P	E	E	E
Myotis thysanodes	fringed myotis	P	P	E	P	E	E	E
Pipistrellus hesperus	western pipistrelle	P	P	E	P	E	E	E
Plecotus townsendii	Townsend's big-eared bat	P	P	E	P	E	E	E
Euderma maculatum	spotted bat	NE	NE	NE	NE	E	NE	P

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Timbisha Shoshone Homeland
Final LEIS

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MOLOSSIDAE - Free-tailed bats								
Tadarida brasiliensis	Brazilian free-tailed bat	P	P	P	P	P	P	P
BIRDS								
CATHARTIDAE - American Vultures								
Cathartes aura	turkey vulture	E	E	O	E	E	E	E
ACCIPITRIDAE - Hawks								
Accipiter cooperii	Coopers hawk	E	E	E	E	E	E	E
Accipiter gentilis	northern goshawk	E	E	E	E	E	E	E
Accipiter striatus	sharp-shinned hawk	E	E	E	E	E	E	E
Aquila chrysaetos	golden eagle	E	E	E	E	E	E	E
Buteo jamaicensis	red-tailed hawk	O	O	O	O	O	O	O
Buteo lagopus	rough-legged hawk	E	E	E	E	E	E	E
Buteo lineatus	red-shouldered hawk	E	E	E	E	E	E	E
Buteo regalis	ferruginous hawk	E	E	E	E	E	E	E
Buteo swainsoni	Swainson's hawk	E	E	E	E	E	E	E
Circus cyaneus	northern harrier	O	E	E	E	E	E	E
Haliaeetus leucocephalus	bald eagle	NE	NE	NE	NE	NE	NE	NE
Pandion haliaetus	osprey	NE	NE	NE	NE	NE	NE	NE
FALCONIDAE - Falcons								
Falco mexicanus	prairie falcon	E	E	E	E	E	E	E
Falco peregrinus	peregrine falcon	NE	NE	E	E	E	E	E
Falco peregrinus anatum	American peregrine falcon	NE	NE	NE	NE	E	E	E
Falco sparverius	American kestrel	E	E	E	E	E	E	E
Callipepla californica	California quail	E	E	E	E	E	E	E
Callipepla gambelii	Gambel's quail	E	E	E	E	E	E	E
Centrocercus urophasianus	sage grouse	E	E	E	E	E	E	E
Oreortyx pictus	mountain quail	E	E	E	E	E	E	E
COLUMBIDAE - Doves								
Zenaida asiatica	white-winged dove	E	E	E	E	E	E	E
Zenaida macroura	mourning dove	O	E	O	E	O	E	E
CUCULIDAE - Cuckoos								
Coccyzus americanus occidentalis	western yellow-billed cuckoo	NE	NE	E	NE	E	E	NE
Geococcyx californianus	greater roadrunner	E	P	O	P	E	NE	E
TYTONIDAE - Barn Owls								
Tyto alba	barn owl	E	E	E	E	E	E	E
STRIGIDAE - Typical Owls								
Aegolius acadicus	saw-whet owl	E	E	E	E	E	E	E
Asio otus	long-eared owl	E	E	E	E	E	E	E
Glaucidium gnoma	northern pygmy owl	E	E	E	E	E	E	E

Table 11.
Wildlife Species Observed or Expected to Occur On Lands Proposed for Transfer, Acquisition and Transfer, and Cooperative Activities/Special Uses
Timbisha Shoshone Homeland
Final LEIS

Scientific name[1]	Common name	DVJ	IR	FC	SJ	LR	LS	C
STRIGIDAE - cont.								
Bubo virginianus	great horned owl	E	E	E	E	E	E	E
Micrathene whitneyi	elf owl	NE	NE	NE	NE	NE	NE	NE
Otus flammeolus	flammulated owl	E	E	E	E	E	E	E
Otus kennicottii	western screech owl	E	E	E	E	E	E	E
Speotyto [=Athene]cunicularia hypugea	western burrowing owl	E	E	E	E	E	E	O
PICIDAE - Woodpeckers								
Melanerpes uropygialis	gila woodpecker	E	E	E	E	E	E	E
Melanerpes lewis	Lewis' woodpecker	E	E	E	E	E	E	E
Picoides pubescens	downy woodpecker	E	E	E	E	E	E	E
Picoides scalaris	ladder-backed woodpecker	E	E	E	E	E	E	E
Picoides villosus	hairy woodpecker	E	E	E	E	E	E	E
Sphyrapicus nuchalis	red-naped sapsucker	E	E	E	E	E	E	E
Sphyrapicus ruber	red-breasted sapsucker	E	E	E	E	E	E	E
Sphyrapicus thyroideus	Williamson's sapsucker	E	E	E	E	E	E	E
PLOVERS								
Charadrius alexandrinus nivosus	western snowy plover	NE	E	NE	NE	NE	NE	NE
TYRANNIDAE - Tyrant Flycatchers								
Empidonax difficilis	Pacific-slope flycatcher	E	E	E	E	E	E	E
Empidonax traillii	willow flycatcher	NE	NE	E	NE	E	E	E
Lanius ludovicianus	loggerhead shrike	O	E	E	O	E	E	E
Myiarchus cinerascens	ash-throated flycatcher	E	E	E	E	E	E	E
Myiachus tyrannulus	brown-breasted flycatcher	E	NE	E	E	E	E	E
Phainopepla nitens	phainopepla	E	E	E	E	E	E	E
Sayornis nigricans	black phoebe	E	E	E	E	E	E	E
Sayornis saya	Say's phoebe	E	E	E	E	E	E	E
Tyrannus verticalis	western kingbird	E	E	E	E	E	E	E
HIRUNDINIDAE - Swallows								
Hirundo pyrrhonota	cliff swallow	E	E	E	E	E	E	E
Hirundo rustica	barn swallow	E	E	E	E	E	E	E
Stelgidopteryx serripennis	rough-winged swallow	E	E	E	E	E	E	E
Tachycineta bicolor	tree swallow	E	E	E	E	E	E	E
Tachycineta thalassina	violet-green swallow	E	E	E	E	E	E	E
CORVIDAE - Crows, Jays								
Aphelocoma coerulescens	western scrub jay	E	E	E	E	E	E	E
Corvus brachyrhynchos	American crow	E	E	E	E	E	E	E
Corvus corax	common raven	O	O	O	O	O	O	O
Cyanocitta stelleri	Steller's jay	NE	NE	NE	NE	E	E	E
Gymnorhinus cyanocephalus	pinon jay	NE	NE	NE	E	E	E	E
Nucifraga columbiana	Clark's nutcracker	E	E	E	E	E	E	E
Pica pica	black-billed magpie	E	E	E	E	E	E	E
Quiscalus mexicanus	great-tailed grackle	E	E	E	E	O	O	E

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PARIDAE - Chickadees, Titmouse								
Auriparus flaviceps	verdin	E	E	E	E	E	E	E
Baeolophus inornatus	oak titmouse	E	E	E	E	E	E	E
Parus rufescens	chestnut-backed chickadee	E	E	E	E	E	E	E
AEGITHALIDAE - Bushtit								
Psaltriparus minimus	bushtit	E	E	E	E	E	E	E
TROGLODYTIDAE - Wrens								
Catherpes mexicanus	canyon wren	E	E	E	E	E	E	E
Salpinctes obsoletus	rock wren	E	E	E	E	E	E	E
Salpinctes obsoletus	cactus wren	E	E	E	E	E	E	E
Thryomanes bewickii	Bewick's wren	E	E	E	E	E	E	E
Troglodytes aedon	house wren	E	E	E	E	E	E	E
MUSCICAPIDAE - Kinglets, Thrushes								
Catharus guttatus	hermit thrush	E	E	E	E	E	E	E
Chamaea fasciata	wrentit	E	E	E	E	E	E	E
Polioptila caerulea	blue-gray gnatcatcher	E	E	E	E	E	E	E
Polioptila melanura	black-tailed gnatcatcher	E	E	E	E	E	E	E
Regulus calendula	ruby-crowned kinglet	E	E	E	E	E	E	E
Sialia currucoides	mountain bluebird	E	E	E	E	E	E	E
Sialia mexicana	western bluebird	E	E	E	E	E	E	E
Turdus migratorius	American robin	E	E	E	E	E	E	E
MIMIDAE - Thrashers								
Mimus polyglottis	northern mockingbird	E	E	E	E	E	E	E
Oreoscoptes montanus	sage thrasher	E	E	E	E	E	E	E
Toxostoma bendirei	Bendire's thrasher	E	E	E	E	E	E	E
Toxostoma lecontei	Crissal thrasher	E	E	E	E	E	E	E
Toxostoma locontei	LeConte's thrasher	NE	NE	NE	NE	NE	NE	E
MOTACILLIDAE - Pipits								
Anthus rubescens	American pipit	E	E	E	E	E	E	E
Eremophila alpestris	horned lark	O	E	E	O	E	O	E
STURNIDAE - Starlings								
Sturnus vulgaris	European starling	E	E	E	E	E	E	E
VIREONIDAE -Vireos								
Vireo gilvus	warbling vireo	E	E	E	E	E	E	E
Vireo solitarius	solitary vireo "plumbeous"	E	E	E	E	E	E	E
Vireo vicinior	gray vireo	E	NE	E	E	E	E	E
EMBERIZIDAE - Blackbirds, Grosbeaks, Orioles, Sparrows, Wood Warblers								
Agelaius phoeniceus	red-winged blackbird	NE	NE	NE	NE	NE	NE	NE

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EMBERIZIDAE - cont.								
Aimophila ruficeps	rufous-crowned sparrow	E	E	E	E	E	E	E
Chondestes grammacus	lark sparrow	E	E	E	E	E	E	E
Dendroica coronata	yellow-rumped warbler	E	E	E	E	E	E	E
Dendroica petechia	yellow warbler	O	E	E	E	E	E	E
Euphagus cyanocephalus	Brewer's blackbird	E	E	E	E	E	E	E
Geothlypis trichas	common yellowthroat	E	E	E	E	E	E	E
Guiraca caerulea	blue grosbeak	E	E	E	E	E	E	E
Icterus galbula	northern "Bullock's" oriole	E	E	E	E	E	E	E
Junco hyemalis	dark-eyed junco	E	E	E	E	E	E	E
Melospiza melodia	song sparrow	E	E	E	E	E	E	E
Passerculus sandwichensis	savannah sparrow	E	E	E	E	E	E	E
Passerina amoena	lazuli bunting	E	E	E	E	E	E	E
Pheucticus melanocephalus	black-headed grosbeak	E	E	E	E	E	E	E
Pipilo crissalis	California towhee	E	E	E	E	E	E	E
Pipilo crissalis eremophilus	Inyo California towhee	NE	NE	NE	NE	NE	NE	NE
Sturnella neglecta	western meadowlark	E	E	E	E	E	E	E
Vermivora celata	orange-crowned warbler	E	E	E	E	E	E	E
Wilsonia pusilla	Wilson's warbler	E	E	E	E	E	E	E
Zonotrichia atricapilla	golden-crowned sparrow	E	E	E	E	E	E	E
Zonotrichia leucophrys	white-crowned sparrow	E	E	E	E	E	E	E
FRINGILLIDAE - Finches								
Carduelis psaltria	lesser goldfinch	E	E	E	E	E	E	E
Carduelis tristis	American goldfinch	E	E	E	E	E	E	E
Carpodacus mexicanus	house finch	E	E	E	E	E	E	E
Carpodacus purpureus	purple finch	E	E	E	E	E	E	E
PASSERIDAE - weaver finches								
Passer domesticus	house sparow	E	E	E	E	E	E	E
AMPHIBIANS								
BUFONIDAE - True toads								
Bufo boreas	western toad	E	E	E	E	E	E	E
Bufo punctatus	red spotted toad	E	E	E	E	E	E	E
HYLIDAE - Treefrogs								
Hyla regilla	Pacific treefrog	NE	NE	E	NE	E	E	E
RANIDAE - True frogs								
Rana catesbeiana	bullfrog	NE	NE	E	NE	E	E	NE
SALAMANDRIDAE -Newts, Salamander								
batrachoseps aridus	desert salamander	NE	NE	NE	P	NE	NE	NE
Batrachoseps campi	Inyo Mountains salamander	NE	E	NE	NE	NE	NE	E

Table 11.
Wildlife Species Observed or Expected to Occur On Lands Proposed for Transfer, Acquisition and Transfer, and Cooperative Activities/Special Uses
Timbisha Shoshone Homeland
Final LEIS

Scientific name[1]	Common name	DVJ	IR	FC	SJ	LR	LS	C
REPTILES								
TESTUDINIDAE - Land tortoises								
Gopherus agassizii	desert tortoise	E	NE	P	P	P	P	P
COLUBRIDAE - Colubrids								
Pituophis melanoleucus deserticola	gopher snake	E	E	E	E	E	E	E
Arizona elegans eburnata	desert glossy snake	E	E	E	E	E	E	E
Chionactus occipitalis	Mojave shovel-nosed snake	E	E	E	E	P	P	P
Chionactus occipitalis talpina	Nevada shovel-nosed snake	E	E	E	E	P	P	P
Hypsiglene torquata	desert night snake	E	E	E	E	E	E	E
Lampropeltis getulas californiae	California kingsnake	E	E	E	E	E	E	E
Masticophis flagellum piceus	coachwhip	E	E	E	E	E	E	E
Masticophis taeniatus	striped whipsnake	E	E	E	E	E	E	E
Phyllorhyncus decurtatus perkinsi	western leaf-nosed snake	E	E	E	E	E	E	E
Rhinocheilus lecontei lecontei	western long-nosed snake	E	E	E	E	E	E	E
Salvadora hexalepis hexalepis	desert patch-nosed snake	E	E	E	E	E	E	E
Sonora semiannulata	western ground snake	E	E	E	E	E	E	E
Tantilla planiceps utahensis	Utah black-headed snake	P	P	P	E	E	E	E
Thamnophis sirtalis	common garter snake	NE	NE	NE	NE	P	P	P
Trimorphodont biscutatus vandenberghi	California lyresnake	NE	E	E	NE	NE	E	E
BOIDAE - Boas and Their Allies								
Lichanura trivigata	rosy boa	NE	E	E	NE	NE	NE	E
LEPTOTYPHLOPIDAE - Slender Blind Snakes								
Leptotyphlops humilis	western blind snake	E	E	E	E	E	E	E
VIPERIDAE - Rattlesnakes								
Crotalus cerastes	Mojave sidewinder	E	E	E	E	NE	NE	NE
Crotalus mitchellii stephensi	Panamint rattlesnake	NE	E	NE	NE	E	E	E
Crotalus scutulatus	Mojave rattlesnake.	E	NE	E	E	NE	NE	NE
IGUANIDAE - Iguanids								
Callisaurus draconoides	zebra-tailed lizard	E	E	E	E	NE	NE	E
Cambelia wislizenni	leopard lizard	E	E	E	E	E	E	E
Crotaphytus bicinctores	collard lizard	NE	NE	NE	NE	E	E	E
Dipsosaurus dorsalis	desert iguana	E	E	E	E	NE	NE	NE
Phrynosoma platyrhinos calidiarum	southern horned lizard	E	E	E	E	P	P	P
Sauromalis obesus	chuckwalla	NE	NE	E	NE	E	E	E
Sceloporus graciosus	sagebrush lizard	O	E	E	O	E	E	E
Sceloporus occidentalis	western fence lizard	E	E	E	E	E	E	E
Sceloporus occidentalis biseriatus	Great Basin fence lizard	E	E	E	E	E	E	E
Sceloporus magister	desert spiny lizard	E	E	E	E	E	E	E
Uma scoparia	Mojave fringe-toed lizard	NE	E	E	NE	NE	NE	NE
Urosaurus graciosus	western brush lizard	E	E	E	E	E	E	E

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Wildlife Species Observed or Expected to Occur On Lands Proposed for Transfer, Acquisition and Transfer, and Cooperative Activities/Special Uses Timbisha Shoshone Homeland Final LEIS

Scientific name[1]	Common name	DVJ	IR	FC	SJ	LR	LS	C
IGUANIDAE - cont.								
Uta stansburiana	desert side-blotched lizard	E	E	E	E	E	E	E
HELODERMATIDAE - Venomous lizards								
Heloderma suspectum	banded gila monster	NE	NE	NE	P	P	P	NE
GEKKONIDAE - Geckos								
Coleonyx v. variegatus	desert banded gecko	E	E	E	E	E	E	E
XANTUSIIDAE - Night lizards								
Xantusia v. vigilis	desert night lizard	E	E	E	E	E	E	E
SCINCIDAE - Skinks								
Eumeces gilberti rubricaudatus	western red-tailed skink	E	E	E	E	E	E	E
Eumeces s. skiltonianus	western skink	E	E	E	E	E	E	E
TEIIDAE - Whiptails and Their Allies								
Cnemidophorus t. tigris	Great Basin whiptail	E	E	E	E	E	E	E
FISH								
CYPRINODONIDAE - Cave fishes								
Cyprinodon diabolis	Devil's Hole pupfish	E	NE	E	NE	NE	NE	NE
Cyprinodon milleri	Cottonball Marsh pupfish	E	NE	E	NE	NE	NE	NE
Cyprinodon nevadensis amargosa	Amargosa pupfish	E	NE	E	NE	NE	NE	NE
Cyprinodon nevadensis shoshone	Shoshone pupfish	E	NE	E	NE	NE	NE	NE
Cyprinodon salinus	Salt Creek pupfish	E	NE	E	NE	NE	NE	NE
Gambusia affinis	western mosquitofish	E	NE	E	NE	NE	NE	NE
Gila bicolor snyderi	Owens pupfish	NE	NE	NE	NE	NE	NE	P
GASTROPODA (Class) - Snails and Slugs								
Assiminea infima	badwater snail	NE	NE	P	NE	NE	NE	NE
Pygulopis owensensis	Owens Valley spring-snail	NE	E	E	NE	NE	NE	NE
Pygulopis wongi	Wong's springsnail	NE	E	NE	E	NE	NE	E
NAUCORIDAE - Water Beetles								
Agabus rumppi	Death Valley agabus diving	E	E	NE	NE	NE	NE	NE
Ambrysus amargosus	Ash Meadows naucorid beetle	E	NE	NE	NE	NE	NE	NE
LEPIDOPTERA								
Danaus plexippus	Monarch butterfly	E	E	E	E	E	E	E
COLEOPTERA								
Polyphylla anteronivea	Saline valley snow-front beetle							
Polyphylla erratica	Death Valley june bettle	NE	E	E	NE	NE	NE	NE

Table 11.
Wildlife Species Observed or Expected to Occur On Lands Proposed for Transfer, Acquisition and Transfer, and Cooperative Activities/Special Uses Timbisha Shoshone Homeland Final LEIS

Scientific name[1]	Common name	DVJ	IR	FC	SJ	LR	LS	C
HEMIPTERA								
Pelocoris shoshone	Amargosa naucorid bug	NE	E	NE	NE	NE	NE	NE
ARACHNIDA								
Trithyreus shoshonenis	Shoshone cave whip scorpion	NE	NE	NE	P	P	P	P

Site occurrence key
E = expected O = observed
NE = not expected P = potential

Site Location Key
DVJ = Death Valley Junction
SJ = Scotty's Junction
FC = Furnace Creek
IR = Indian Rancheria
C = Centennial
LS = Lida Summit
LR = Lida Ranch

Footnotes: 1. Scientific names presented in alphabetic order (by genus) within each family represented.

Sources: CDFG, 2000; Nevada Natural Heritage Program, Department of Conservation and Natural Resources, 2000; BLM 1995a and 1997a; Witaker, 1998; Griggs, 1997; Stebbins, 1966; and Brown, 1991.

Table 12.
Sensitive Wildlife Species Known or Recorded in the Region of Lands Proposed For Transfer, Acquisition and Transfer, and Cooperative Activities/Special Uses
Timbisha Shoshone Homeland
Final LEIS

Common Name	Scientific Name	Status[a]	Habitat	Closest Reported Occurrence to Project Site[b]	Potential for Occurrence in the Project Vicinity	Potential for Occurrence on the Project Site	DVJ	SJ	FC	IR	C	LS	LR
Mammals													
Nelson's bighorn sheep	*Ovis canadensis nelsoni*	CSC	Semi open precipitous terrain	Records from CNDDB,NVDDB	High; migration corridors	High; seasonal	P	P	P	E	E	E	E
Mojave ground squirrel	*Spermophilus mohavensis*	SC/CAT	Sandy desert, creosote bush scrub	Records from CNDDB,NVDDB	High; suitable habitat present	High; suitable habitat present	NE	NE	NE	E	E	NE	NE
spotted bat	*Euderma maculatum*	CSC	Rocky outcrops, coves	Records from CNDDB,NVDDB	High; suitable habitat present	High; suitable habitat present	NE	NE	NE	P	NE	E	E
Birds													
Swainson's hawk	*Buteo swainsoni*	CAT	Open plains, desert, and mtns.	Records from CNDDB,NVDDB	High; suitable habitat present	High; suitable habitat present	E	E	E	E	E	E	E
Cooper's hawk	*Accipiter cooperi*	CSC	Open grassland, marsh, and agricultural areas	Records from CNDDB,NVDDB	High; suitable habitat present	Low; very limited suitable habitat present	NE	NE	NE	NE	E	E	E
northern Goshawk	*Accipiter gentilis*	SC/CSC	Riparian and other dense forest habitats near water	Records from CNDDB,NVDDB	Low; very limited suitable habitat available	Low; very limited suitable habitat available	NE	NE	NE	NE	NE	NE	NE
bald eagle	*Haliaeetus leucocephalus*	FT/SE	Roosts and nests in old-growth trees or snags near water, including ocean, rivers, reservoirs	Records from CNDDB,NVDDB Salton Sea basin	Low; very limited habitat	Not expected	NE	NE	NE	NE	NE	NE	NE
American peregrine falcon	*Falco peregrinus anatum*	FE/SE	Nesting on ledges on high cliffs near water; forages in open areas	Records from CNDDB,NVDDB	High; suitable habitat present	Low; limited suitable habitat present	NE	NE	NE	NE	E	E	E
prairie falcon	*Falco mexicanus*	CSC	Forages in grasslands, savannas, and rangeland	Records from CNDDB,NVDDB		Low; very limited suitable habitat present	NE	NE	NE	NE	E	E	E
long-eared owl	*Asio otus*	CSC	Favors pine forest, grasslands strictly nocturnal.	Records from CNDDB,NVDDB	High; suitable habitat present has been observed in area	Low; limited suitable habitat	NE	NE	E	NE	E	E	E

Table 12.
Sensitive Wildlife Species Known or Recorded in the Region of Lands Proposed For Transfer, Acquisition and Transfer, and Cooperative Activities/Special Uses
Timbisha Shoshone Homeland
Final LEIS

Common Name	Scientific Name	Status[a]	Habitat	Closest Reported Occurrence to Project Site[b]	Potential for Occurrence in the Project Vicinity	Potential for Occurrence on the Project Site	DVJ	SJ	FC	IR	C	LS	LR
burrowing owl	*Steotyto [=Athene] cunicularia hypugea*	SC/CSC	Fields, prairies, deserts,prairie dog towns, golfcourses and airports	Records from CNDDB,NVDDB	High; suitable habitat present has been observed in area	High; Suitable habitat present	E	E	E	NE	E	E	E
northern harrier	*Circus cyaneus*	CSC	Open grasslands, marshes	Records from CNDDB,NVDDB	Moderate; suitable habitat found in vicinity	Moderate; suitable habitat present	E	E	E	NE	E	E	E
western snowy plover	*Charadrius alexandrinus nivosus*	FT/SC	Salt ponds, creeks, shoreline habitat	Records from CNDDB,NVDDB reported to occur at Indian Rancheria	Low; very limited habitat	Low; limited suitable habitat present	NE	NE	NE	E	NE	NE	NE
western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	CE	Riparian woodland, 2nd growth forest	Records from CNDDB,NVDDB	Low; very limited habitat	Low; very limited habitat	NE	NE	E	NE	NE	E	E
yellow warbler	*Dendroica petechia brewsteri*	CSC	Shrubs, thickets near water holes	Records from CNDDB,NVDDB	High; suitable habitat found in vicinity	High; suitable habitat present at some sites	NE	NE	E	E	NE	E	E
loggerhead shrike	*Lanius ludovicianus*	SC/CSC	Open habitat with sparse vegetation or bare ground	Records from CNDDB,NVDDB	High; suitable habitat present	High; suitable habitat present	O	O	E	E	E	E	E
willow flycatcher	*Empidonax traillii*	CE	Deciduous forests and thickets	Records from CNDDB,NVDDB	High; suitable habitat present	Low; limited suitable habitat present	NE	NE	E	NE	E	E	E
brown - breasted flycatcher	*Myiachus tyrannulus*	CSC	Desert, open grassland	Records from CNDDB,NVDDB	Moderate; suitable habitat found in vicinity	Moderate; suitable habitat present at Blackrock spring	E	E	E	NE	E	E	E
Inyo California towhee	*Pipilo crissalis eremophilus*	FT/CE/SC	Widespread in brushy cover common in parks and suburbs	Records from CNDDB,NVDDB	Low; very limited habitat	Low; very limited habitat present	NE	NE	NE	NE	NE	NE	NE
Crissal thrasher	*Toxostoma crissale*	CSC	Lower elevations, thick desert scrub especially along streams, mesquite	Records from CNDDB,NVDDB	Moderate; suitable habitat found in vicinity	Moderate; suitable habitat present at Blackrock spring	E	E	E	E	E	E	E
Le Conte's thrasher	*Toxostoma lecontei*	CSC	Thinly vegetated desert, especially saltbush and creosote shrub	Records from CNDDB,NVDDB	Moderate; suitable habitat found in vicinity	Moderate; suitable habitat present at Blackrock spring	E	E	E	E	P	E	E

Table 12.
Sensitive Wildlife Species Known or Recorded in the Region of Lands Proposed For Transfer, Acquisition and Transfer, and Cooperative Activities/Special Uses
Timbisha Shoshone Homeland
Final LEIS

Common Name	Scientific Name	Status[a]	Habitat	Closest Reported Occurrence to Project Site[b]	Potential for Occurrence in the Project Vicinity	Potential for Occurrence on the Project Site	DVJ	SJ	FC	IR	C	LS	LR
gray vireo	*Vireo vicinior*	CSC	Pinyon/Juniper, arid scrub,chaparral	Records from CNDDB,NVDDB	Moderate; suitable habitat found in vicinity	Moderate; suitable habitat present at Blackrock spring	E	E	E	NE	E	E	E
Fish													
Amargosa pupfish	*Cyprinodon nevadensis amargosae*	CSC	Salt ponds, creeks, sinks	Records from CNDDB,NVDDB	Moderate; suitable habitat found in vicinity	Low; very limited habitat present	NE NE NE	NE NE NE	NE NE NE	NE NE NE	NE NE NE	NE NE NE	NE NE NE
Shoshone pupfish	*Cyprinodon nevadensis shonshone*	SC,SC	Salt ponds, creeks, sinks	Records from CNDDB,NVDDB	Moderate; suitable habitat found in vicinity	Low; very limited habitat present	NE NE NE	NE NE NE	NE NE NE	NE NE NE	NE NE NE	NE NE NE	NE NE NE
Owens pupfish	*Cyprinodon radiosus*	FE,SE	Salt ponds, creeks, sinks	Records from CNDDB,NVDDB	Moderate; suitable habitat found in vicinity	Low; very limited habitat present	NE NE NE	NE NE NE	NE NE NE	NE NE NE	NE NE NE	NE NE NE	NE NE NE
Salt Creek pupfish	*Cyprinodon salinus salinus*	CSC	Salt ponds,creeks,sinks	Records from CNDDB,NVDDB	Moderate; suitable habitat found in vicinity	Low; very limited habitat present	NE NE NE	NE NE NE	NE NE NE	NE NE NE	NE NE NE	NE NE NE	NE NE NE
Cottonball Marsh pupfish	*Cyprinodon salinus milleri*	CAT	Salt ponds,creeks,sinks	Records from CNDDB,NVDDB	Moderate; suitable habitat found in vicinity	Low; very limited habitat present	NE NE NE	NE NE NE	NE NE NE	NE NE NE	NE NE NE	NE NE NE	NE NE NE
Amphibians													
Inyo Mountains slender salamander	*Batrachoseps campi*	SC,CSC	Isolated springs, streams surrounded by arid desert scrub	Records from CNDDB,NVDDB	Moderate; suitable habitat found in vicinity	Low; not observed during surveys	NE	NE	E	NE	E	NE	NE
desert salamander	*Batrachoseps aridus*	FE,CSC	Isolated palm oasis, limestone slabs and talus fields	Records from CNDDB,NVDDB	Low; very limited habitat	Low; very limited habitat present	NE	NE	NE	P	NE	NE	NE
Reptiles													
desert tortoise	*Gopherus agassizii*	FT, CT	Arid desert valleys, bajadas,canyons	Records from CNDDB,NVDDB	High; suitable habitat	Moderate; suitable habitat present	P	P	P	NE	P	P	P

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Panamint alligator lizard	*Gerrhonotus panamintinus*	SC,CSC	Scrub desert, Joshua tree zone lower reaches of pinyon/juniper associated with springs and seeps	Records from CNDDB,NVDDB	High; suitable habitat	High; suitable habitat	NE	NE	NE	NE	E	NE	NE
sagebrush lizard	*Sceloporus graciosus graciosus*	CSC	Well lit, open ground devoid of extensive plant cover	Records from CNDDB,NVDDB	High; suitable habitat	High; suitable habitat	E,O	E,O	E,O	NE	E,O	E,O	E,O
chuckwalla	*Sauromalus obesus*	NVS	Desert foothills, rock outcrops	Records from CNDDB,NVDDB	High; suitable habitat	High; suitable habitat	NE	NE	NE	NE	E	E	E
banded gila monster	*Heloderma suspectum*	FT,NVS	Succulent desert, rocky hillsides canyon bottoms and washes	Records from CNDDB,NVDDB	Moderate; suitable habitat present	Moderate; suitable habitat present	NE	NE	NE	NE	NE	NE	NE
Invertebrates													
badwater snail	*Assiminea infima*	SC	Springs, oases	Records from CNDDB,NVDDB	Moderate; suitable habitat present	Moderate; suitable habitat present	NE	NE	E	NE	NE	NE	NE
Owens Valley spring-snail	*Pyrgulopsis owensensis*	SC	Springs, oases	Records from CNDDB,NVDDB	Moderate; suitable habitat present	Moderate; suitable habitat present	NE	NE	E	E	NE	NE	NE
Wong's springsnail	*Pyrgulopsis wongi*	SC	Springs, oases	Records from CNDDB,NVDDB	Moderate; suitable habitat present	Moderate; suitable habitat present	NE	NE	E	E	E	NE	NE
Shoshone cave whip scorpion	*Trithyreus shoshonensis*	BLMS	Desert caves, rock outcrops	Records from CNDDB,NVDDB	Moderate; suitable habitat present	Moderate; suitable habitat present	NE	P	NE	NE	P	P	P
Death Valley agabus diving beetle	*Agabus rumppi*	SC	Springs, oases	Records from CNDDB,NVDDB	Moderate; suitable habitat present	Moderate; suitable habitat present	E	E	NE	NE	NE	NE	NE
Saline Valley snow - front june beetle	*Polyphylla anteronivea*	SC	Sandy areas, washes, valleys	Records from CNDDB,NVDDB	Moderate; suitable habitat present	Moderate; suitable habitat present	NE	NE	E	E	E	NE	NE
Amargosa naucorid bug	*Pelocoris shoshone*	CSC	Sandy areas, washes, valleys	Records from CNDDB,NVDDB	Moderate; suitable habitat present	Moderate; suitable habitat present	NE	NE	NE	E	NE	NE	NE

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Common Name	Scientific Name	Status[a]	Habitat	Closest Reported Occurrence to Project Site[b]	Potential for Occurrence in the Project Vicinity	Potential for Occurrence on the Project Site	DVJ	SJ	FC	IR	C	LS	LR
Death Valley june beetle	*Polyphylla erratica*	SC	Sandy areas, washes, valleys	Records from CNDDB,NVDDB	Moderate; suitable habitat present	Moderate; suitable habitat present	NE	NE	E	E	NE	NE	NE
Monarch butterfly	*Danaus plexippus*	CSC	Various habitats, usually around water	Records from CNDDB,NVDDB	Moderate; suitable habitat present	Moderate; suitable habitat present	E	E	E	E	E	E	E

SITE OCCURRENCE KEY
E = Expected NE = Not Expected P = Potential O = Observed

SITE LOCATION KEY

DVJ = Death Valley Junction	C = Centennial
SJ = Scotty's Junction	LR = Lida Ranch
FC = Furnace Creek	LS = Lida Summit
IR = Indian Rancheria	

a

FEDERAL
- FE Listed as endangered under the Federal Endangered Species Act (16 U.S.C. 1531 et seq.)
- FT Listed as threatened under the Federal Endangered Species Act (16 U.S.C. 1531 et seq.)
- FPE Proposed for endangered status by the Federal Government in the Federal Register (16 U.S.C. 1531 et seq.)
- FPT Proposed for threatened status by the Federal Government in the Federal Register (16 U.S.C. 1531 et seq.)
- C1 Candidate Category 1 for listing under the Federal Endangered Species Act (16 U.S.C. 1531 et seq.)
- SC U.S. Fish and Wildlife Service designated "Species of Concern" (Former Category 2 Candidate for listing).
- C1R Recommended for Category 1 Candidate status by U.S. Fish and Wildlife Service
- C2R Recommended for Category 2 Candidate status by U.S. Fish and Wildlife Service
- BLMS Bureau of Land Management -Sensitive

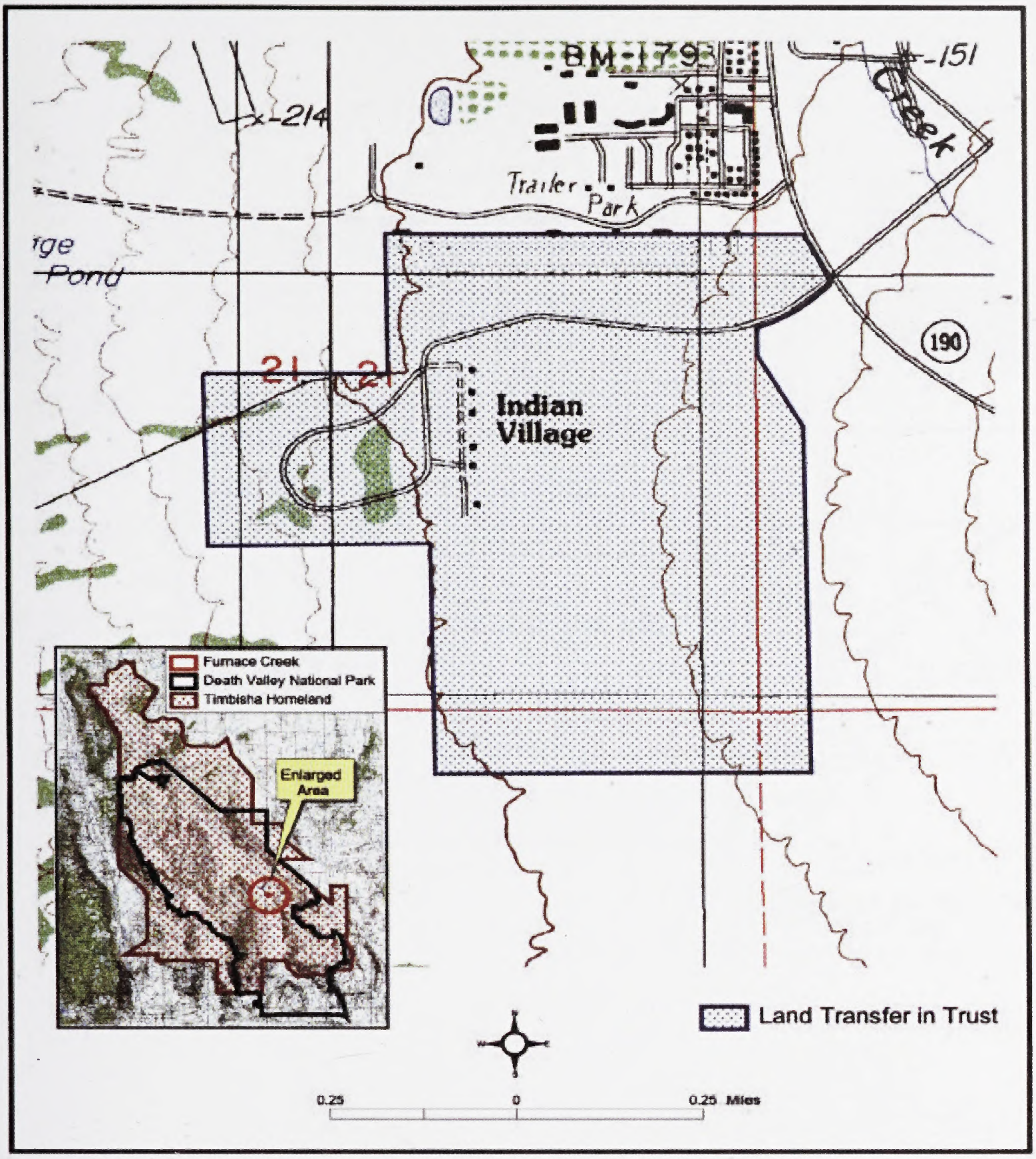
STATE
- CE Listed as endangered under the California Endangered Species Act
- CT Listed as threatened under the California Endangered Species Act
- CR California Rare Plant (Section 1900, Fish and Game Code, Native Plant Protection Act))
- CSC California Species of Special Concern
- CFP California Fully Protected Species
- SA Special Animal
- SC California Department of Fish and Game Sensitive Community, Chapter 1, 21001, Section C

STATE
- NVE Listed as endangered by the state of Nevada under authority of NAC 501.100 - 503.104
- NVT Listed as threatened by the state of Nevada under authority of NAC 501.100 - 503.104
- NVSC Nevada Species of Special Concern

b

Sources:

CDFG, 2000; Nevada Natural Heritage Program, Department of Conservation and Natural Resources, 2000; Griggs, 1997; Whitaker, 1998; Stebbing, 1966; Brown 1991; and BLM,1995a and 1997a.



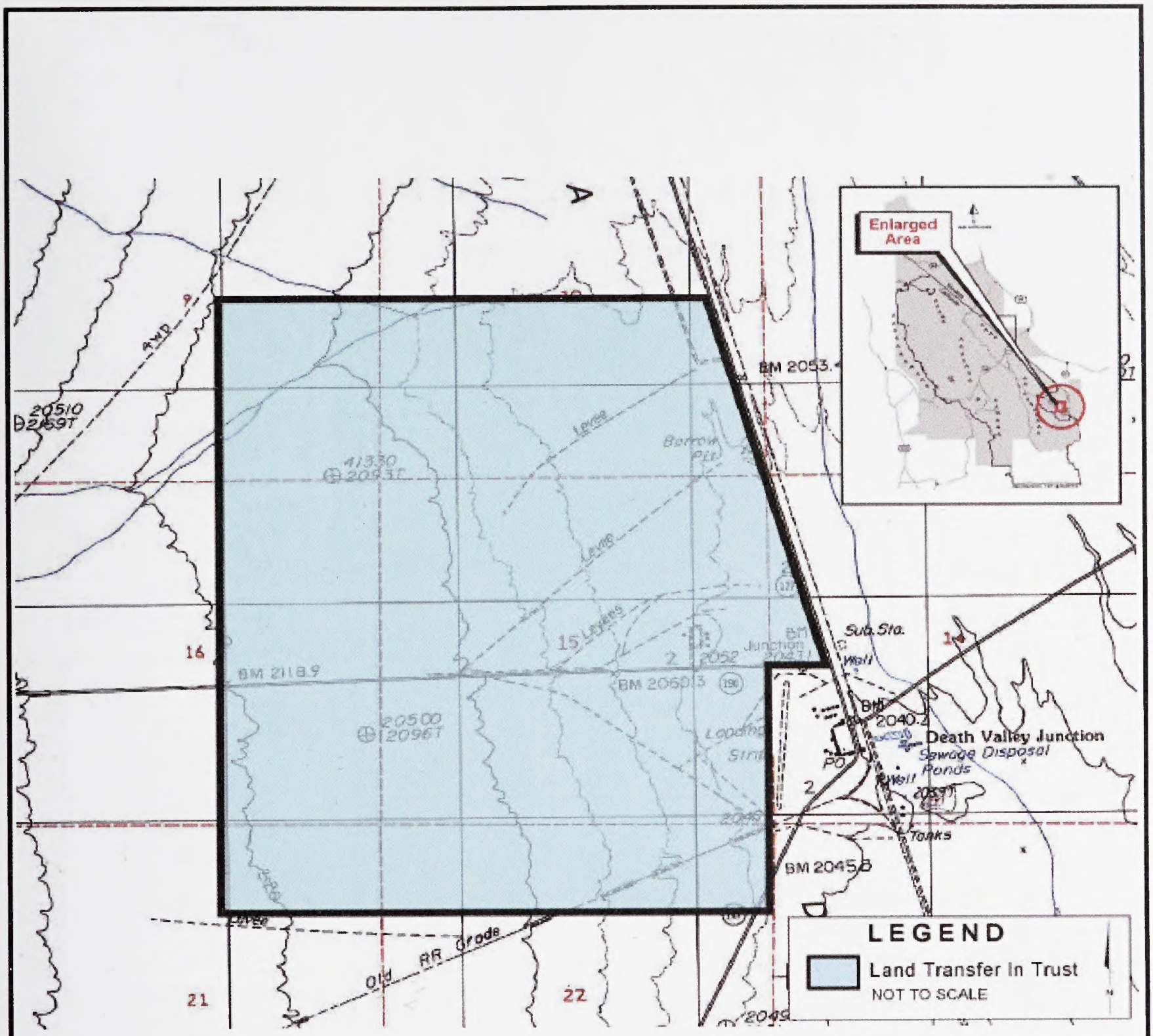
Timbisha GIS Dept.
9-15-00

Furnace Creek, California

Source: Timbisha Shoshone Tribe, 2000
Reference: USGS, Furnace Creek &
West of Furnace Creek, CA.
Inyo County, California 7.5 min. quad topo 1988
Legislative Environmental Impact Statement
Timbisha Shoshone Homeland

HLA

Map
1



143/20047
DSC/042000

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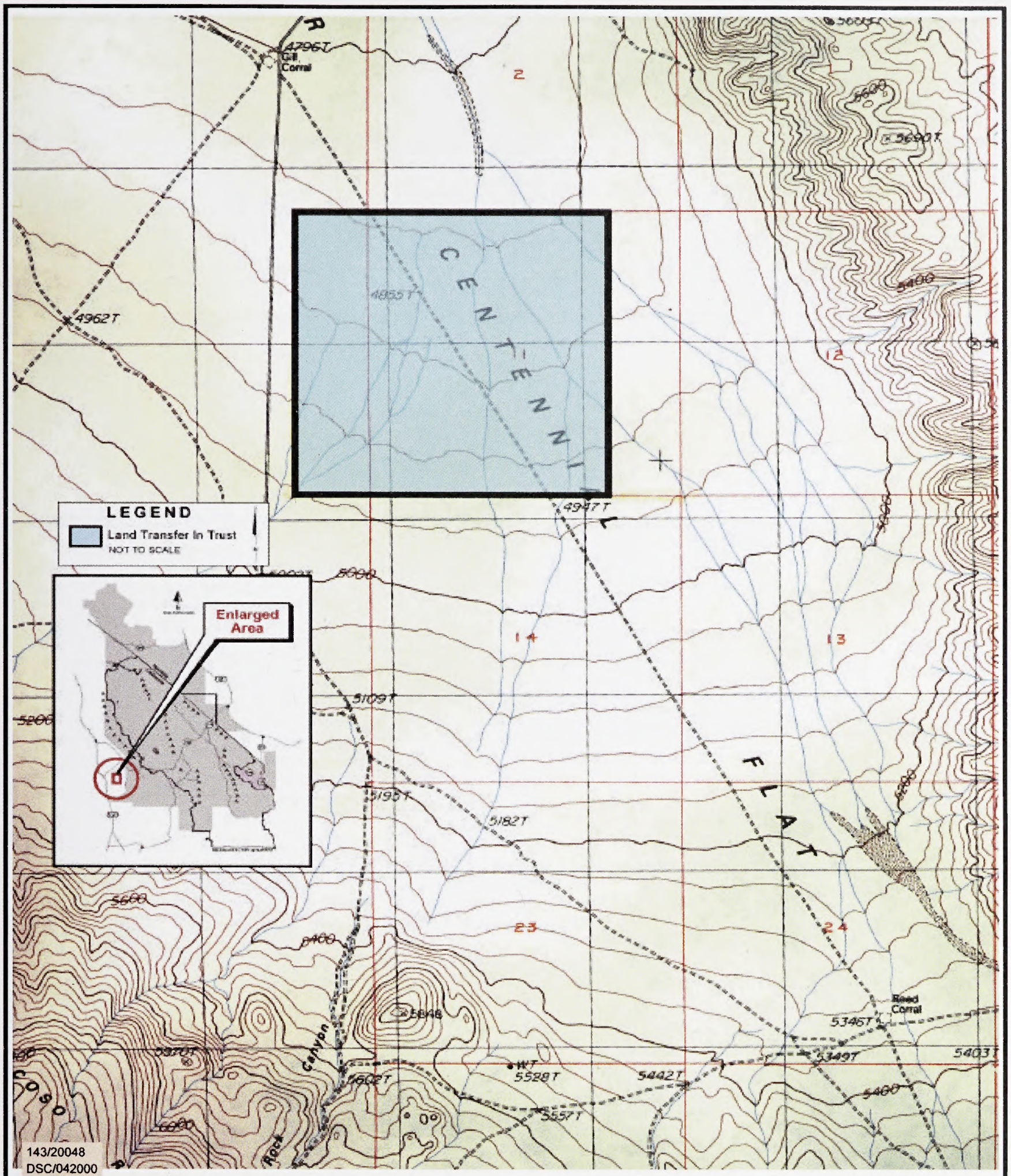
Death Valley Junction, California
Source: Bureau of Land Management, 2000
Reference: USGS, Death Valley Junction California - Nevada, 7.5 min. quad topo 1987
Draft Legislative Environmental Impact Statement
Timbisha Shoshone Homeland

Map 2



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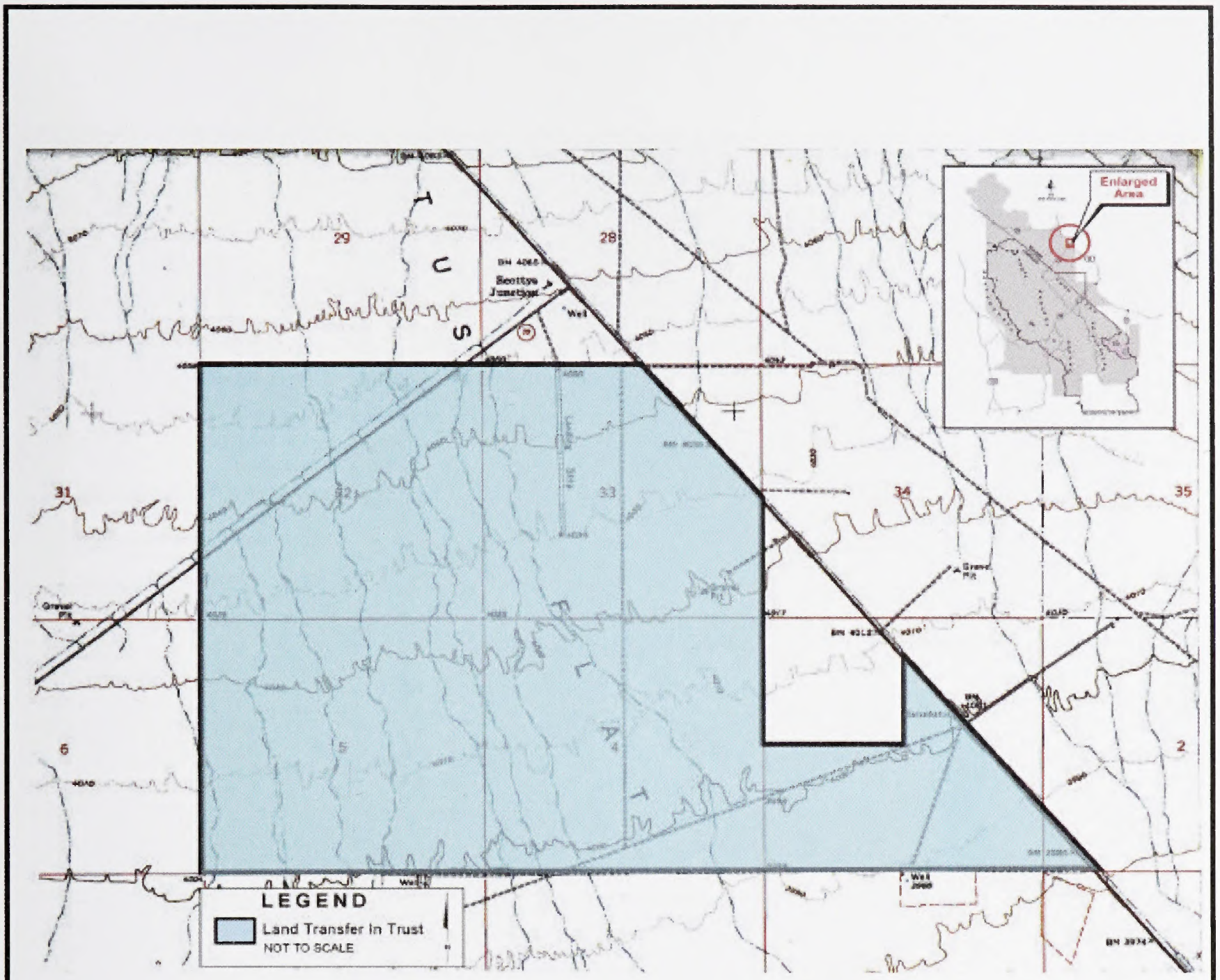
Centennial Site Map
Source: Bureau of Land Management, 2000
Reference: USGS, Talc City Hills California - Inyo County, California, 7.5 min. quad topo 1987
Draft Legislative Environmental Impact Statement
Timbisha Shoshone Homeland

Map 3



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DSC/042000

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Scotty's Junction, Nevada
Source: Bureau of Land Management, 2000
Reference: USGS, Scotty's Junction, Nevada - Nye County, Nevada, 7.5 min. quad topo 1968
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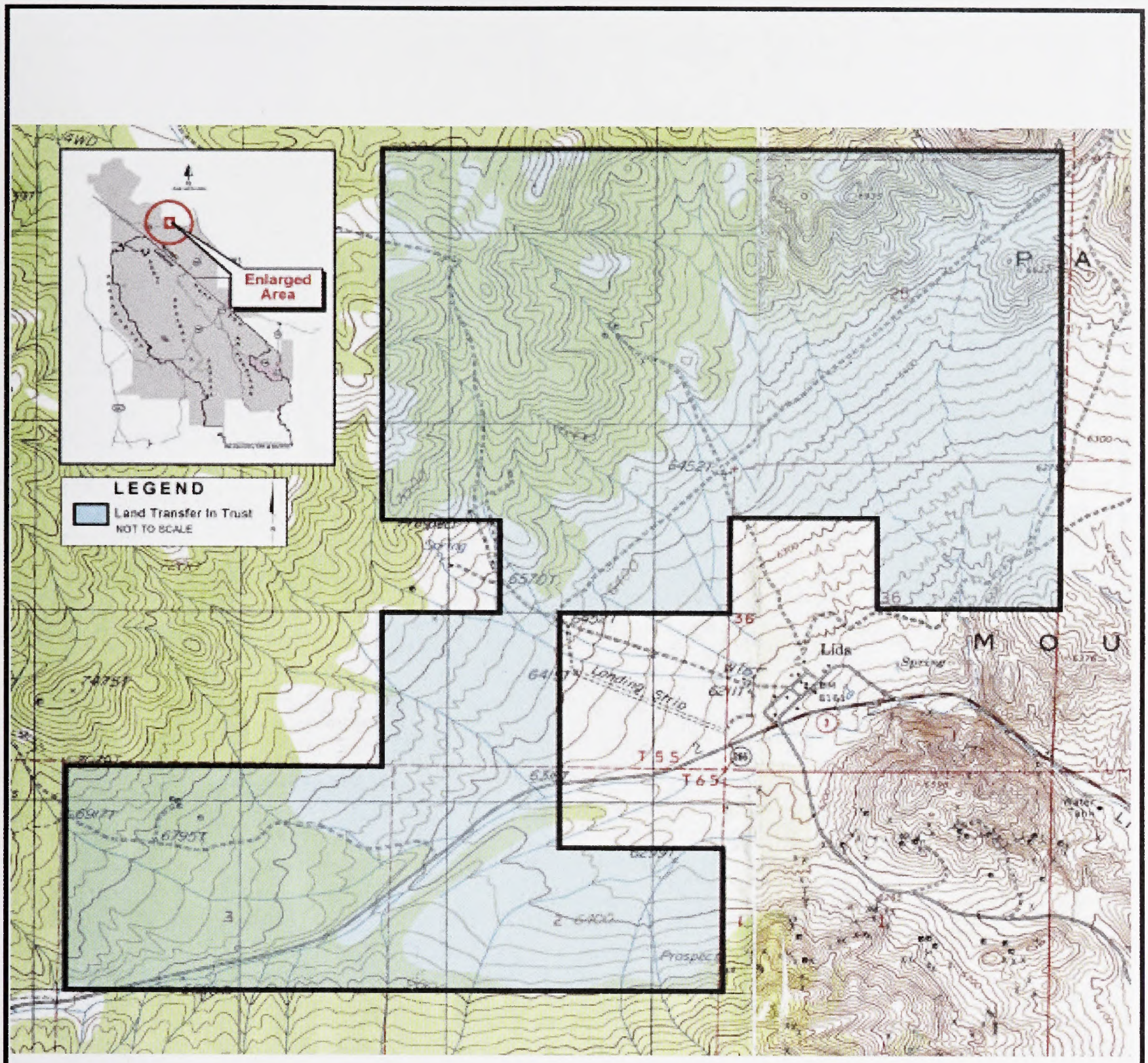
Map 4



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DSC/042000

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Lida Community Parcel, Nevada
Source: Bureau of Land Management, 2000
Reference: USGS, Lida, Nevada Esmeralda County, 7.5 min. quad topo 1968 and Magruder, Nevada, Esmeralda County 7.5 quad topo 1987
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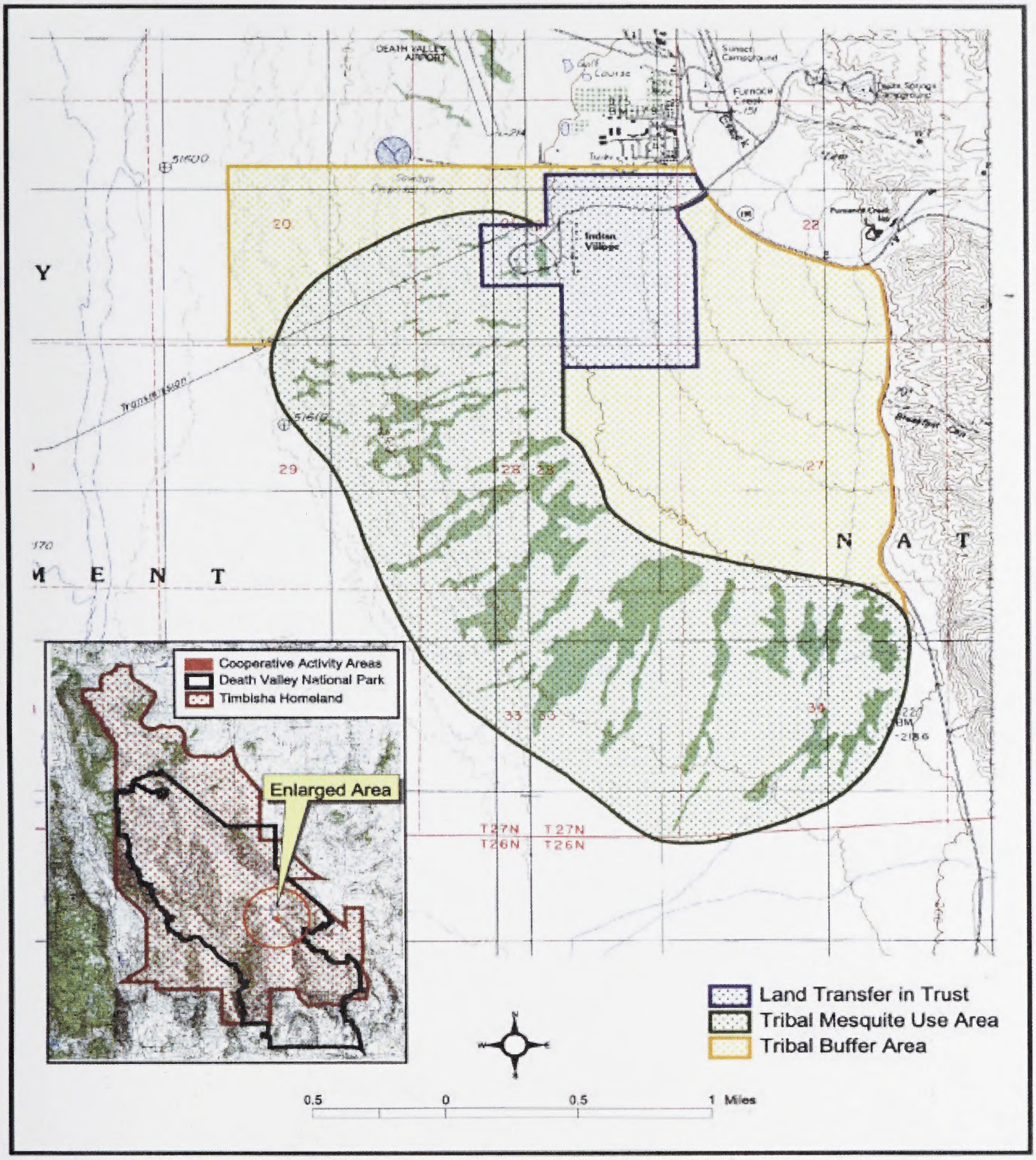
Map 5



Timbisha GIS Dept.
9-15-00

Furnace Creek Cooperative Activity Areas

Source: Timbisha Shoshone Tribe, 2000
Reference: USGS, Furnace Creek &
West of Furnace Creek
Inyo County, California 7.5 min. quad topo 1988
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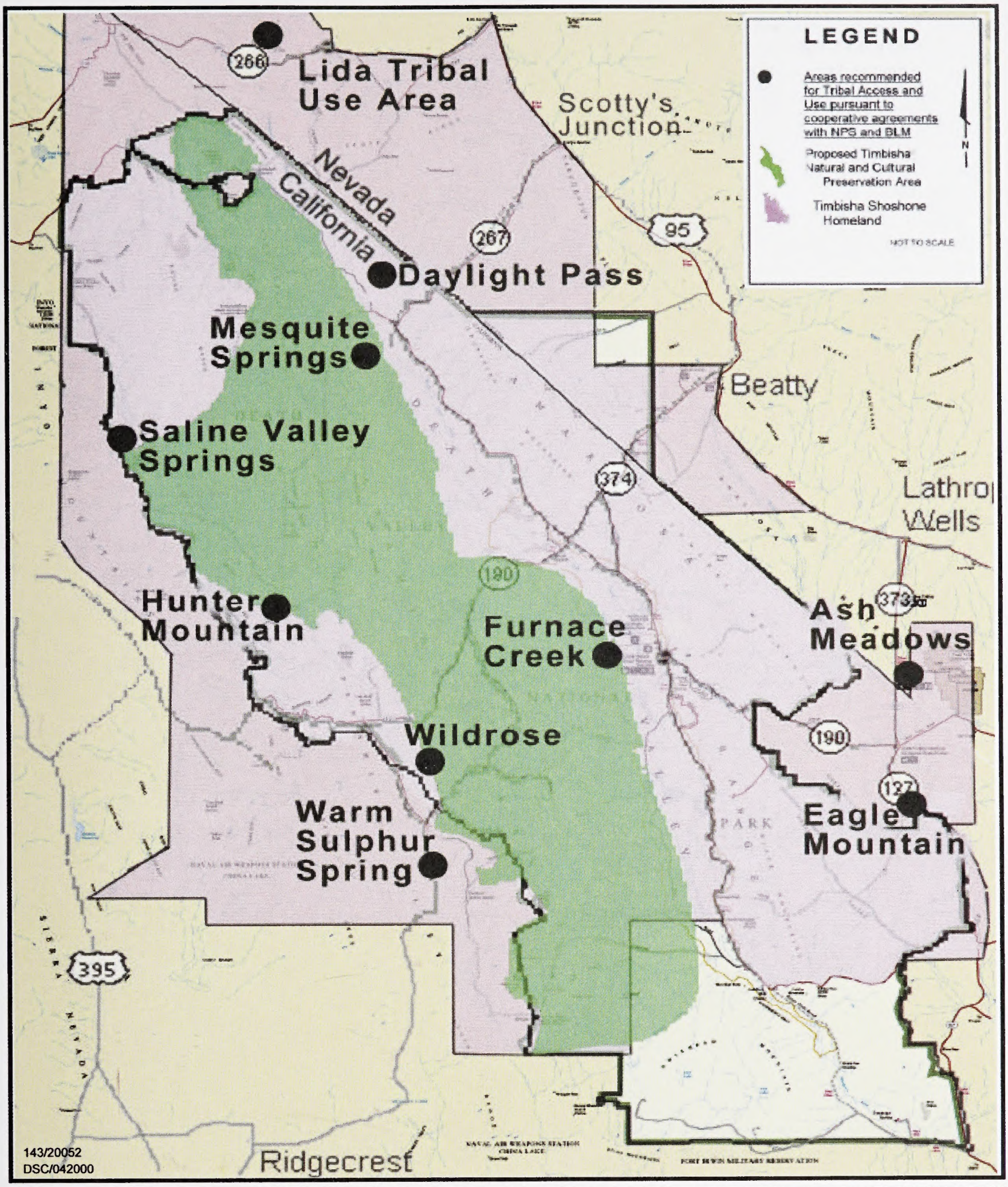
Map
6



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Timbisha Shoshone Tribal Cooperative Activity Area/Special Use Areas
Source: Bureau of Land Management, 2000
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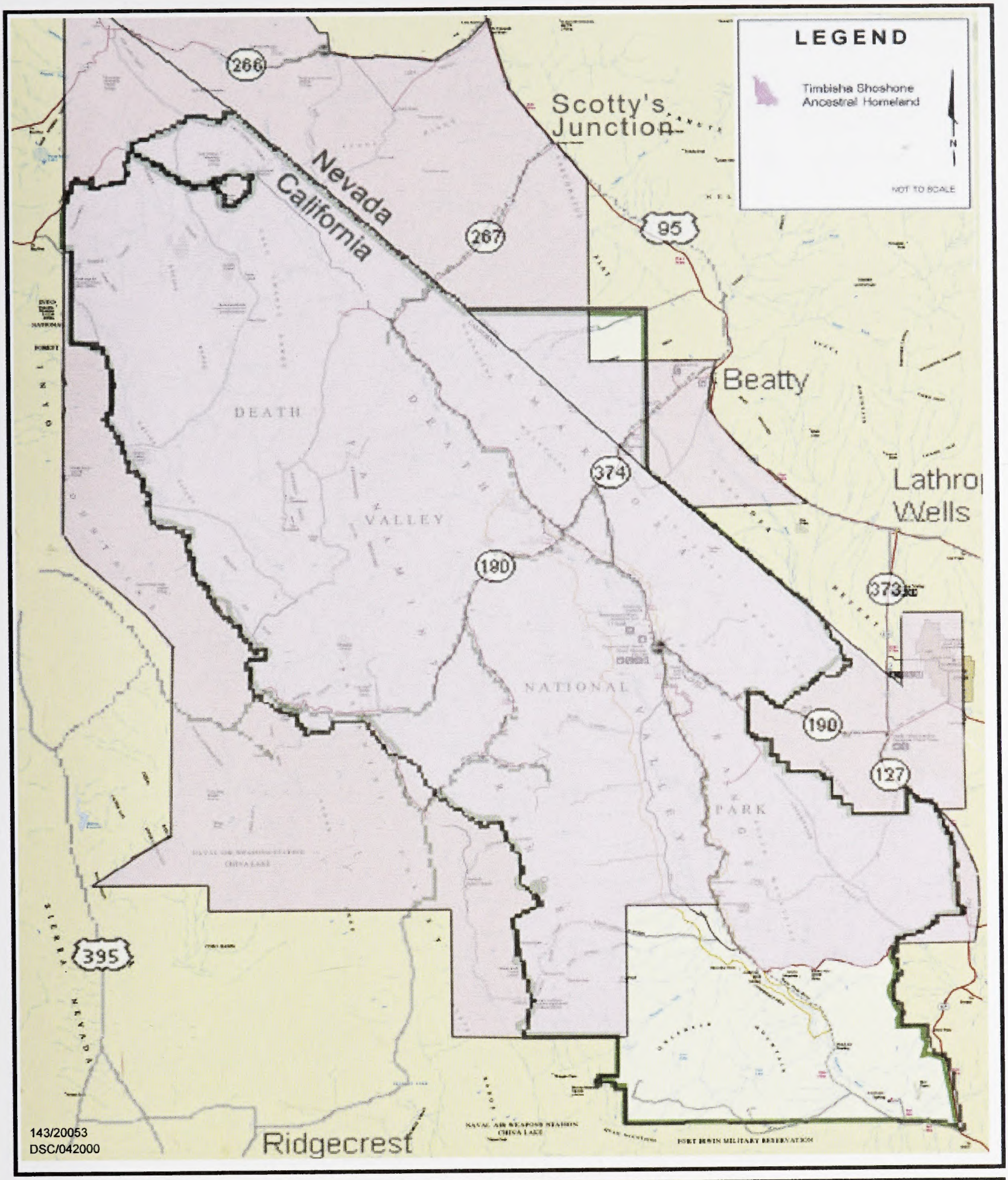
Map 7



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Source: Bureau of Land Management, 2000
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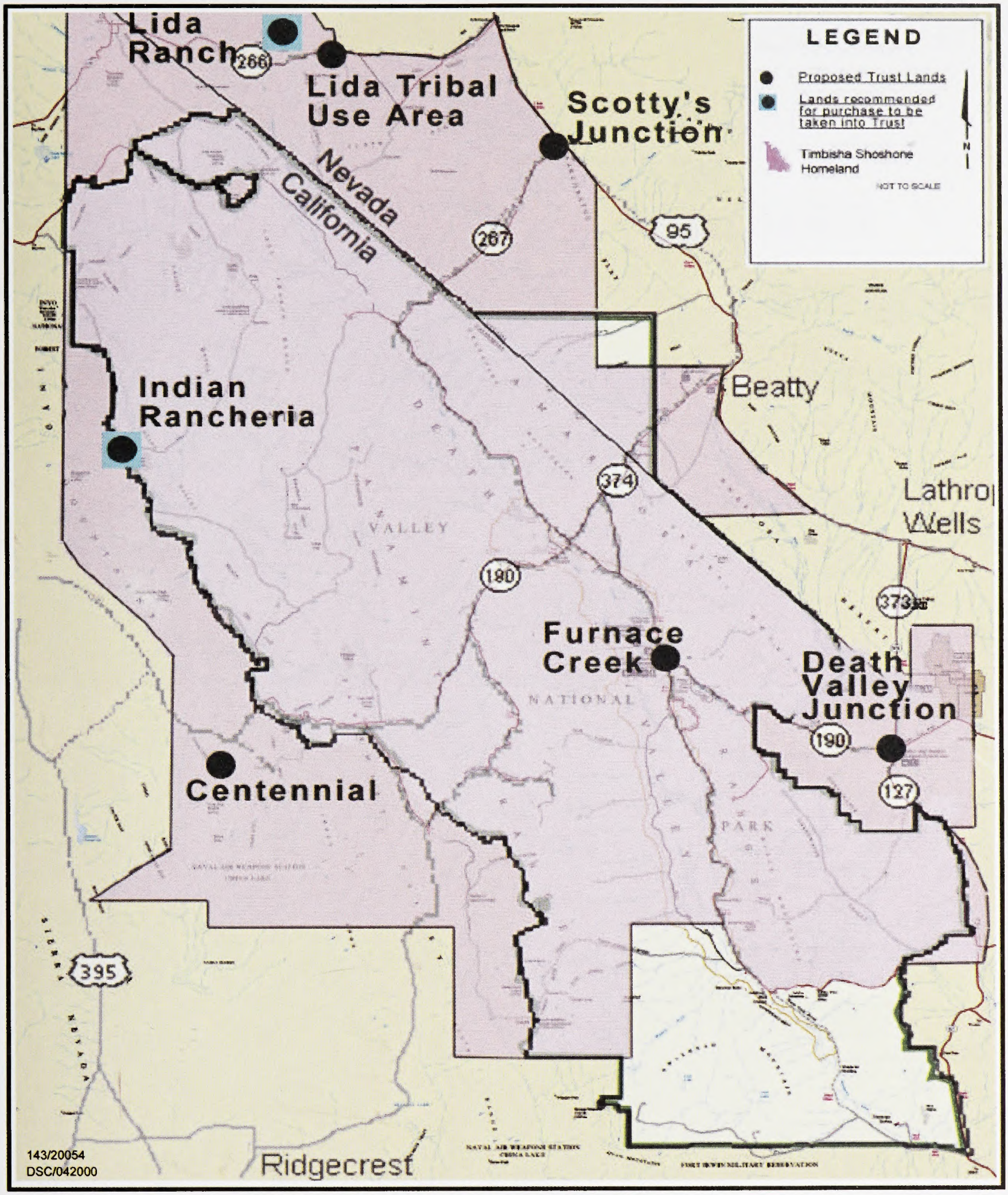
Map 8



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Proposed Trust Lands
Source: Bureau of Land Management, 2000
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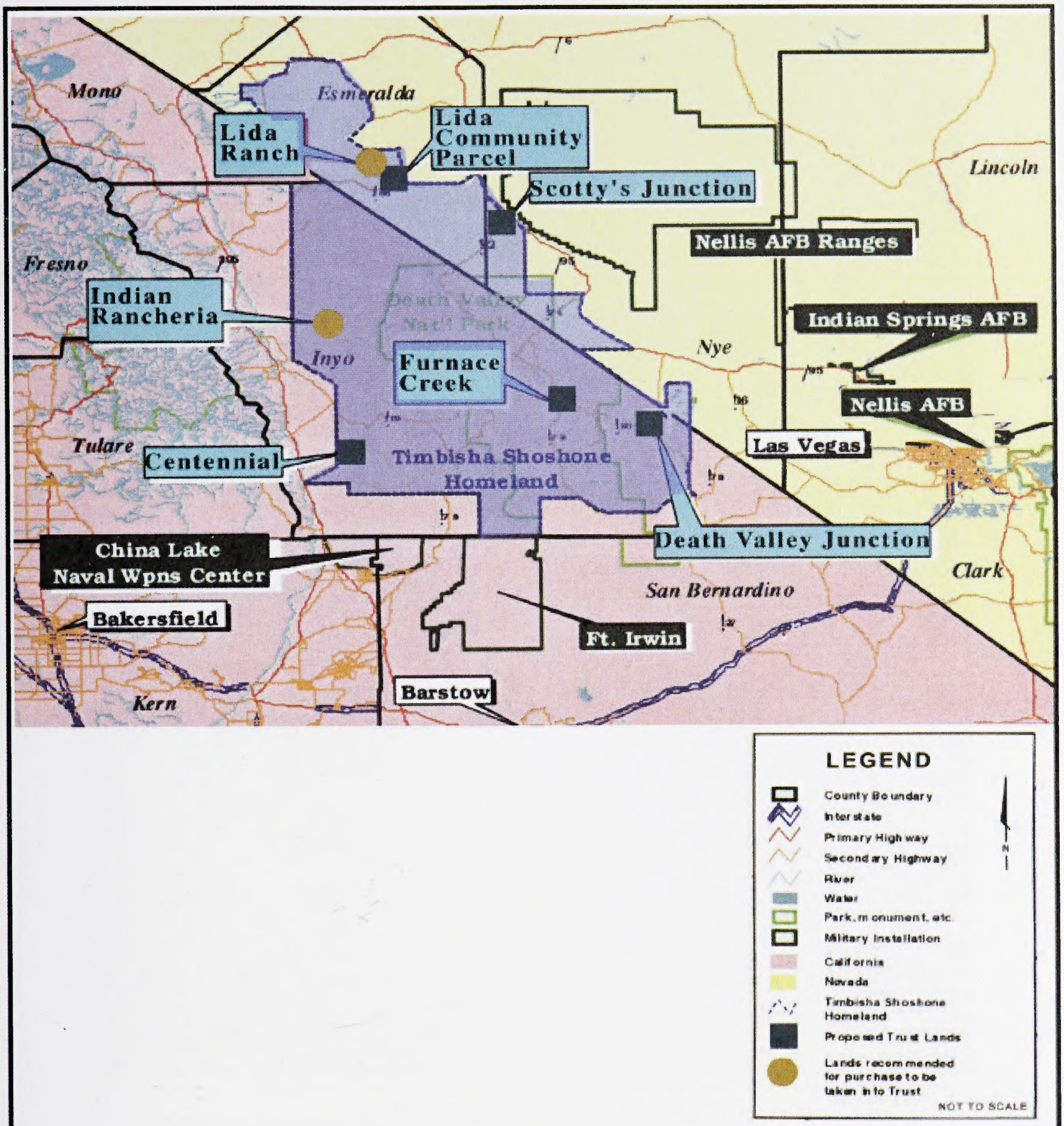
Map 9



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Regional Land Use Features
Source: Army Environmental Policy Institute, 2000
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Map 10

143/20056
DSC/042000

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NPS, BLM, and USFWS Jurisdiction Over Lands Subject to the Proposed Action
Source: Bureau of Land Management, 2000
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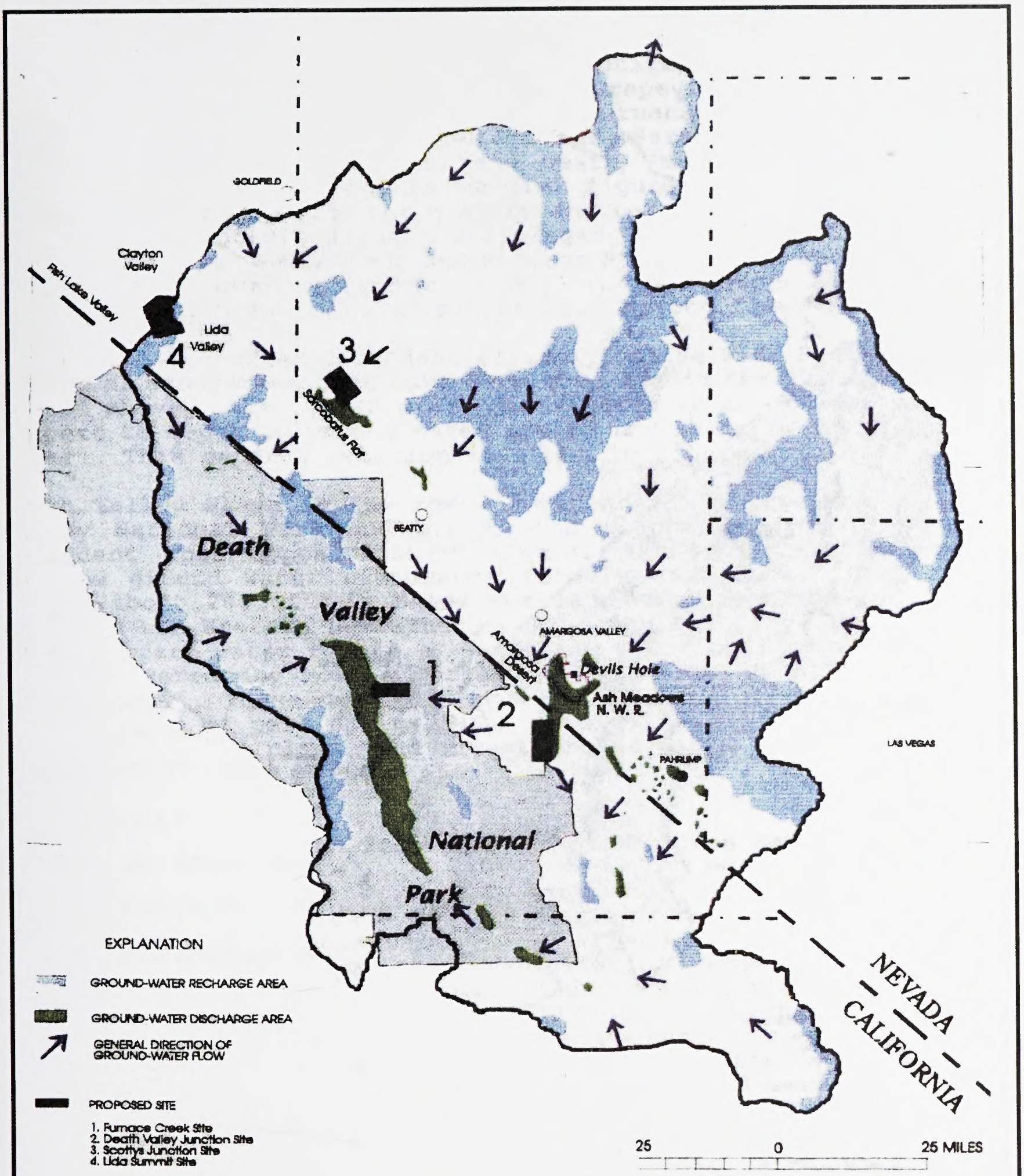
Map 11



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Groundwater Recharge Areas, Groundwater Discharge Areas, and General Direction Of Regional Groundwater Flow

Source: Werrell, 1998

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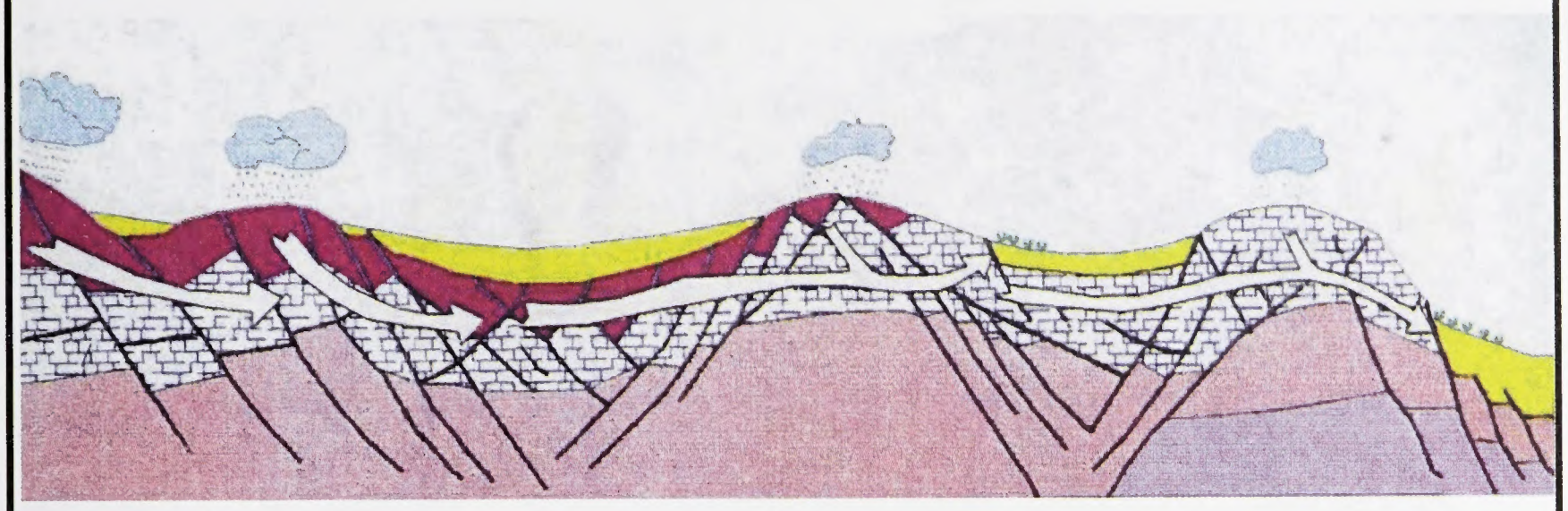
Figure 1



BASIN FILL: Sand and gravel deposits from aquifers, clay and silt deposits impede groundwater flow

VOLCANIC ROCKS: Aquifers as well as layers that impeded groundwater flow

CARBONATE ROCKS: Aquifers

NONCARBONATE SEDIMENTARY ROCKS: Impede flow except in located areas where they are highly fractured

CRYSTALLINE ROCKS: Impedes flow

FAULT

GROUNDWATER DISCHARGE AREAS

GROUNDWATER FLOW PATH

RAIN AND SNOW IN MOUNTAINOUS AREAS

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Schematic Section Across Mountain Ranges And Intervening Basins, Showing Configuration At Depth of Aquifers and Rocks that Impede Flow

Source: Werrell, 1998

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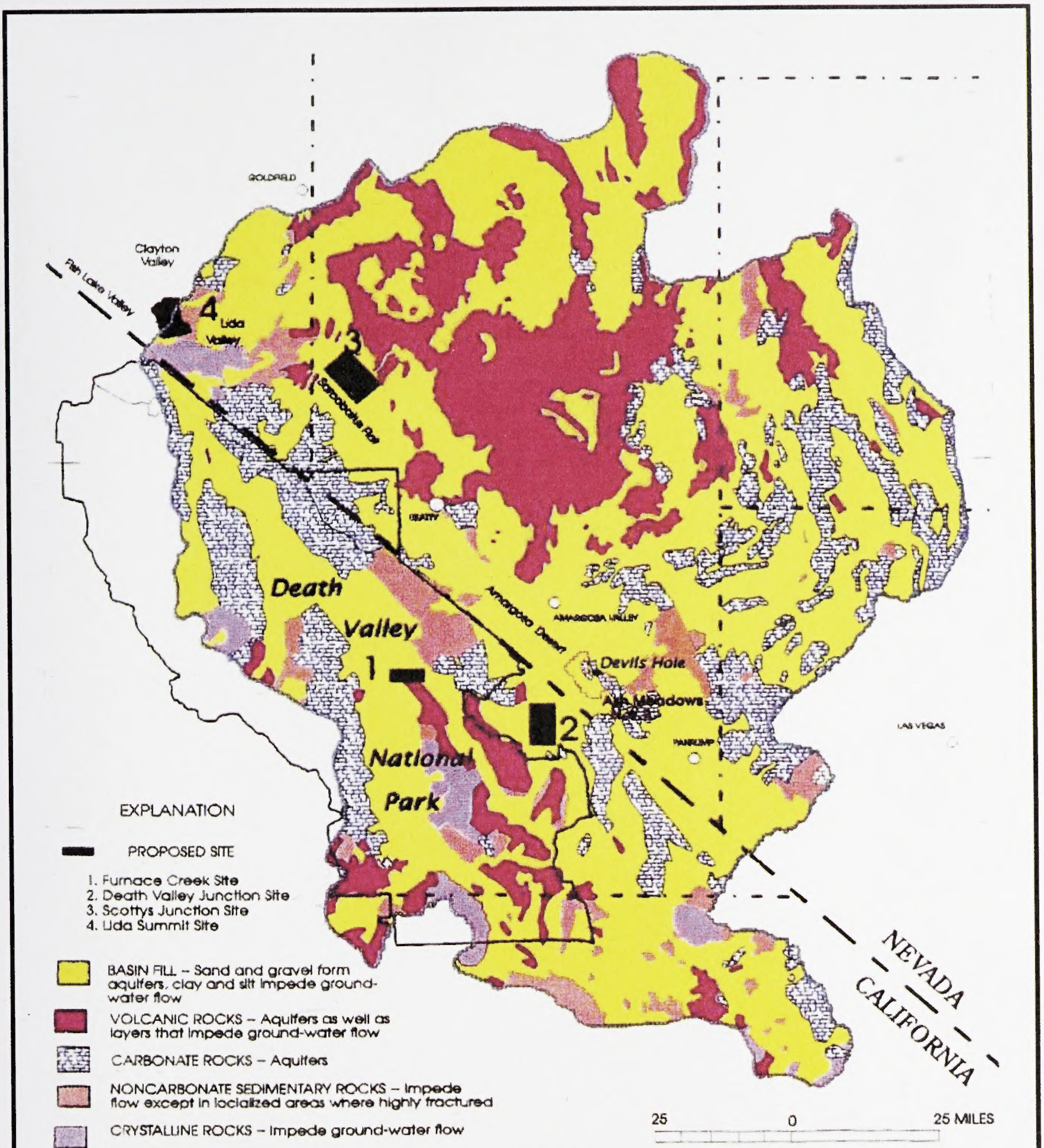
Figure 2



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Hydrogeologic Units and Their Water Yielding Properties

Source: Werrell, 1998

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Figure 3

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